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DEPARTMENT OF FISH AND GAME

Rod Sando, Director

FEDERAL AID IN FISH RESTORATION
Job Performance Report
Program F-71-R-23

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
SOUTHWEST REGION (Subprojects I-D, II-D, III-D)

PROJECT I.	SURVEYS AND INVENTORIES
Job a.	Southwest Region Mountain Lakes Investigations
Job b.	Southwest Region Lowland Lakes Investigations
Job c.	Southwest Region Rivers and Streams Investigations
Job d.	Southwest Region Salmon and Steelhead Investigations
PROJECT II.	TECHNICAL GUIDANCE
PROJECT III.	HABITAT MANAGEMENT

By

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1998 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-23

Project I: Surveys and Inventories | Subproject I-D: Southwest Region

Job No.: a | Title: Mountain Lakes Investigations

Contract Period: July 1, 1998 to June 30, 1999

ABSTRACT

A total of 69 mountain lakes in the upper Middle Fork Boise River were visited in 1998. Two fisheries staff personnel conducted one sampling trip. A volunteer leading a string of pack goats provided logistical support for the trip. Eight lakes were gillnetted and five of these lakes were also angled. Two lakes were angled only. Fifty-nine of the lakes visited were classified as "frog ponds" and only observations for the presence of fish and/or amphibians were undertaken. Six lakes contained westslope cutthroat *Oncorhynchus clarki lewisi* and one lake contained rainbow trout *O. mykiss.* Twelve ponds were identified that contained long-toed salamanders *Ambystoma macrodactylum*, four ponds had adult spotted frogs *Rana luteiventris,* and two ponds had juvenile spotted frogs. Many of the ponds were ephemiral and were dry at observation.

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METHODS

Alpine lakes, ponds, and marshes were visited to document the distribution of fish and amphibians. Two backpacking fishery staff visited lakes with the support of a volunteer with a string of pack goats. Lake position was determined with a Global Positioning System (GPS) device. Some lakes were sampled with gill nets, some were angled, and some were observed for fish and amphibians. Gill nets were 30.5 m long with 7.6 m panels of 19, 25, 32, and 38 mm square mesh monofilament, and where set, were set overnight. All fish captured in gill nets were measured to the nearest mm and weighed to the nearest g. Lakes were visually surveyed for campsites and signs of human use and notes taken about difficulty of access. Amphibians were documented by walking around the water body, and identifying and counting any amphibians observed. Water quality measurements were taken at some lakes. Data collected was entered into a mountain lakes database and one-page reports were produced on each lake visited.

RESULTS

A total of 69 lakes, ponds, and marshes in the Middle Fork Boise drainage were visited by regional fishery staff in 1998. Gill net sampling only was conducted in eight waters. Seven lakes were angled to capture fish. Fifty-nine of the waters visited were classified as "frog ponds" with only observations for the presence or absence of amphibians noted.

Westslope cutthroat trout *Oncorhynchus clarki lewisi* were found in Confusion, Dandy, Low Pass, Nanny Creek, Queens River #33, and Timpa Lakes. The Queens River #33 lake is not stocked and these fish were naturally produced. Rainbow trout *O. mykiss* were captured only in Blue Jay Lake.

Spotted frog *Rana luteiventris* adult or juveniles were found in six lakes and ponds. Long toed salamanders *Ambystoma macrodactylum* were found in 12 waters.

Summary information for each water containing fish is provided in Appendix A.

Appendix A. **Mountain Lakes General Information**

Mountain Lake General Information

Lake Name:	BLUE JAY	Quadmap:	Mount Everly
Planting Number:	100242	Outlet:	Queens R
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	MFBR
Township:	7N	Lake Type:	Cirque
Range:	12E	Elevation:	2592 m
Section:	20	Size:	ha
Latitude:	43 55.66	Maximum Depth:	m
Longitude:	115 02.87	Aspect:	
Spawning Potential: none		Comments:	

Chemical Report:

Date:	9/11/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	19
Secchi (m):	

Human Use Report:

Date:	9/11/98
Human Use:	
Campsite Condition:	1
Campsite Number:	1
Campfire Rings:	1
Trail Condition:	none
Trail Difficulty:	difficult
Litter:	none

Angler Information:

Date:	9/11/98
Number of Anglers:	2
Hours Fished:	2.5
Total Caught	6
Catch per Hour:	2.4

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)
RBT	6	80	350

Mean Length and Weight Report:

Species	Geartype	Date
RBT	Angling	9/11/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
RBT	156	40	294	49	14.2

Amphibian Report:

Date:	9/11/98
Spotted Frog Adults:	0
Spotted Frog Juv:	0
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0
	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
RBT	5				1	

Mountain Lake General Information

Lake Name:	CONFUSION	Quadmap:	Mount Everly
Planting Number:	100280	Outlet:	Timpa Ck
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	Rock Cr
Township:	7N	Lake Type:	Meadow/Bog
Range:	12E	Elevation:	2616 m
Section:	15	Size:	ha
Latitude:	43 57.57	Maximum Depth:	4.5 m
Longitude:	115 00.42	Aspect:	S
Spawning Potential:		Comments:	
Some potential for spawning in inlet and outlet		None	

Chemical Report:

Date:	9/9/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	17
Secchi (m):	

Human Use Report:

Date:	9/9/98
Human Use:	
Campsite Condition:	Good
Campsite Number:	1
Campfire Rings:	0
Trail Condition:	None
Trail Difficulty:	difficult
Litter:	none

Angler Information:

Date:	9/9/98
Number of Anglers:	0
Hours Fished:	0
Total Caught	0
Catch per Hour:	

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)

Mean Length and Weight Report:

Species	Geartype	Date
WSC	Gillnet	9/9/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
WSC	72	12	88	44	10.7

Amphibian Report:

Date:	9/9/98
Spotted Frog Adults:	2
Spotted Frog Juv:	10
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
WSC	8					

Mountain Lake General Information

Lake Name:	DANDY	Quadmap:	Mount Everly
Planting Number:	100273	Outlet:	Rock Ck
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	Rock
Township:	7N	Lake Type:	Cirque
Range:	12E	Elevation:	2590 m
Section:	29	Size:	ha
Latitude:	43 55.04	Maximum Depth:	5 m
Longitude:	115 05.09	Aspect:	E
Spawning Potential:		Comments:	

All fish appeared to be from the same year class.

Chemical Report:

Date:	9/12/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	17
Secchi (m):	

Human Use Report:

Date:	9/12/98
Human Use:	
Campsite Condition:	good
Campsite Number:	3
Campfire Rings:	3
Trail Condition:	none
Trail Difficulty:	difficult
Litter:	moderate

Angler Information:

Date:	9/12/98
Number of Anglers:	2
Hours Fished:	2
Total Caught	12
Catch per Hour:	6

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)
WSC	12	12	13

Mean Length and Weight Report:

Species	Geartype	Date
WSC	Angling	9/12/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
WSC	126	1	213	31	10.4

Amphibian Report:

Date:	9/12/98
Spotted Frog Adults:	0
Spotted Frog Juv:	0
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0
	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
WSC	14					

Mountain Lake General Information

Lake Name:	LOW PASS	Quadmap:	Mount Everly
Planting Number:	100281	Outlet:	None
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	Rock Cr
Township:	7N	Lake Type:	Cirque-sand, gravel
Range:	12E	Elevation:	2714 m
Section:	15	Size:	ha
Latitude:	43 56.88	Maximum Depth:	m
Longitude:	115 03.68	Aspect:	SW

Spawning Potential:
Redds observed along shoreline, no inlet or outlet in Sept, little spawning potential.

Comments:
Observed several 4-10" fish-possibly WSC. Continue present three-year stocking rotation.

Chemical Report:

Date:	9/9/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	17
Secchi (m):	

Human Use Report:

Date:	9/9/98
Human Use:	
Campsite Condition:	Good
Campsite Number:	1
Campfire Rings:	1
Trail Condition:	None
Trail Difficulty:	Difficult
Litter:	None

Angler Information:

Date:	9/9/98
Number of Anglers:	2
Hours Fished:	2
Total Caught	0
Catch per Hour:	0

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)

Mean Length and Weight Report:

Species	Geartype	Date
WSC	Gillnet	9/9/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
WSC	101	4	103	23	10.6

Amphibian Report:

Date:	9/9/98
Spotted Frog Adults:	0
Spotted Frog Juv:	0
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0
	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
WSC	6					

Mountain Lake General Information

Lake Name:	NANNY CREEK	Quadmap:	Mount Everly
Planting Number:	100230	Outlet:	Nanny Ck
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	Queens
Township:	6N	Lake Type:	Cirque
Range:	12E	Elevation:	2605 m
Section:	6	Size:	ha
Latitude:	43 53.35	Maximum Depth:	10 m
Longitude:	115 04.88	Aspect:	N
Spawning Potential:		Comments:	
none to limited, outlet quickly drops off.		Second year class in catch.	

Chemical Report:

Date:	9/12/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	
Secchi (m):	

Human Use Report:

Date:	9/12/98
Human Use:	
Campsite Condition:	none
Campsite Number:	0
Campfire Rings:	0
Trail Condition:	none
Trail Difficulty:	none
Litter:	none

Angler Information:

Date:	9/12/98
Number of Anglers:	1
Hours Fished:	0.5
Total Caught	10
Catch per Hour:	20

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)
WSC	10	73	120

Mean Length and Weight Report:

Species	Geartype	Date
WSC	Angling	9/12/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
WSC	109	4	168	13	12.7

Amphibian Report:

Date:	9/12/98
Spotted Frog Adults:	0
Spotted Frog Juv:	0
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0
	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
WSC	10					

Mountain Lake General Information

Lake Name:	QUEENS R #33	Quadmap:	Mount Everly
Planting Number:	10U102	Outlet:	Unnamed
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	Queens R
Township:	7N	Lake Type:	Cirque
Range:	12E	Elevation:	2501 m
Section:	17	Size:	0 ha
Latitude:	43 56.44	Maximum Depth:	6 m
Longitude:	115 05.61	Aspect:	W

Spawning Potential:
Some potential, two fry observed

Comments:
Lake is relatively shallow, there are many small springs flowing into the lake and flowing up from the bottom, not many fish in the lake. Natural production is carrying this lake at present. No future stocking is recommended

unless

Chemical Report:

Date:	9/11/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	16
Secchi (m):	

Human Use Report:

Date:	9/11/98
Human Use:	
Campsite Condition:	0
Campsite Number:	0
Campfire Rings:	0
Trail Condition:	none
Trail Difficulty:	difficult
Litter:	none

Angler Information:

Date:	9/11/98
Number of Anglers:	2
Hours Fished:	3
Total Caught	14
Catch per Hour:	4.66

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)
WSC	14	60	345

Mean Length and Weight Report:

Species	Geartype	Date
WSC	Angling	9/11/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
WSC	164	26	147	40	8.5

Amphibian Report:

Date:	9/11/98
Spotted Frog Adults:	0
Spotted Frog Juv:	0
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0
	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
WSC	10	1			3	

Mountain Lake General Information

Lake Name:	TIMPA	Quadmap:	Mount Everly
Planting Number:	100278	Outlet:	Rock Ck
County:	ELMORE	Drainage:	MFBR
National Forest:	BOISE	Tributary To:	MFBR
Township:	7N	Lake Type:	Meadow Bog
Range:	12E	Elevation:	2412 m
Section:	22	Size:	ha
Latitude:	43 55.34	Maximum Depth:	6.2 m
Longitude:	115 02.39	Aspect:	W

Spawning Potential:
Excellent, spawning in both inlet and outlet.
Adequate reproduction, recommend no stocking.

Comments:
Fish from above can repopulate this lake if it winterkills. Good flow through, winterkill not likely. Weather was rainy, therefore amphibians weren't active.

Chemical Report:

Date:	9/9/98
Alkalinity (mg/l CaCO3):	
Hardness (mg/l CaCO3):	
pH:	
Conductivity (uS/cm):	
Surface Temp(C):	13
Secchi (m):	

Human Use Report:

Date:	9/9/98
Human Use:	
Campsite Condition:	Good
Campsite Number:	2
Campfire Rings:	2
Trail Condition:	None
Trail Difficulty:	Difficult
Litter:	None

Angler Information:

Date:	9/9/98
Number of Anglers:	0
Hours Fished:	0
Total Caught	0
Catch per Hour:	

Species	Number Caught	Minimum Length (mm)	Maximum Length (mm)

Mean Length and Weight Report:

Species	Geartype	Date
WSC	Gillnet	9/9/98

Species	Mean Length (mm)	S.E.	Mean Weight (g)	S.E.	C-Factor
WSC	212	22	114	41	1.0

Amphibian Report:

Date:	9/9/98
Spotted Frog Adults:	1
Spotted Frog Juv:	1
Tailed Frog Adults:	0
Tailed Frog Juv:	0
Tree Frog Adults:	0
Tree Frog Juv:	0
Salamanders:	0
	0

Length Frequency

Species Captured	<151mm	151-200mm	201-250mm	251-300mm	301-350mm	>350mm
WSC	1	4	3			1

1998 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-23

Project I: Surveys and Inventories | Subproject I-D: Southwest Region

Job No.: b | Title: Lowland Lakes Investigations

Contract Period: July 1, 1998 to June 30, 1999

ABSTRACT

Six regional waters were sampled with a multiple gear lowland lake sampling strategy, which included use of pairs of experimental gill nets, trap nets, and boat electrofishing. C. J. Strike Reservoir, Lake Lowell, Mann Creek Reservoir, Paddock Valley Reservoir, and Red Top Pond were sampled in this manner.

Claytonia Pond and Crane Falls Lake were sampled with boat electrofishing only. Sampling with experimental gill nets only was completed on Deadwood Reservoir and Bull Trout Lake. A combination of trap nets and gill nets were used to sample Lucky Peak Reservoir.

A tag return study was initiated in Mann Creek Reservoir to document the angler return of stocked hatchery catchable rainbow trout *Oncorhynchus mykiss*. A total of 900 fish were tagged of the 10,000 rainbow trout stocked in 1998. Signs were placed at the reservoir explaining how to return the information and drop boxes were provided at the two boat ramps. No rewards were offered for return of the tag information. Over a 20-month period only 12.9% of the tags were returned.

A cooperative project with the U. S. Bureau of Reclamation (BOR) was undertaken at Deadwood Reservoir to further document the status of the bull trout *Salvelinus confluentus* population in the reservoir. Early spring trapnetting was conducted in the reservoir. Two of the main tributary streams, Wild Buck and Basin creeks, had weirs and traps installed to document any up or downstream movement of bull trout. Two bull trout were captured in the reservoir trap net sampling and no bull trout were captured in the tributary weirs.

Creel surveys were conducted at Bull Trout Lake and Martin Lake by U. S. Forest Service "camp hosts" from July to September 1998. Bull Trout Lake anglers expended an estimated 3,020 hours and harvested an estimated 49.6% of the stocked rainbow trout. Martin Lake anglers fished an estimated 1,276 hours and harvested an estimated 87.2% of the stocked rainbow trout.

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METHODS

General Fish Sampling

Electrofishing was conducted from a boom-mounted electrofishing boat. Netting of immobilized fish was conducted with one or two netters. Electrofishing was conducted along the shoreline. Attempts were made to collect all fish immobilized. One unit of electrofishing effort was defined as one hour of activated electrode time. Unless noted below, electrofishing occurred during darkness. Electrofishing catch-per-unit of effort (CPUE) was defined as catch, by both number and weight, per hour of activated electrode time.

Gillnetting used floating and sinking experimental gill nets. Experimental gill nets were 45.7 m long by 1.8 m deep, and were composed of 6-7.6 m panels of 1.9, 2.5, 3.2, 3.8, 5.2 and 6.4 cm bar mesh. Nets were set in late afternoon and pulled the following morning. Nets were set by tying or anchoring one end of the net near or on shore in water less than 0.5 m deep and extending the net toward the center of the water, perpendicular to shore. When more than one floating or one sinking net was used per water, nets were set such that both large and small mesh ends of the nets were set next to shore. One unit of gill net effort was defined as one floating and one sinking experimental gill net fished overnight. Gill net CPUE was calculated as combined catch of one floating and one sinking experimental net, by both number and weight, per night. (Hereafter, gill net catch refers to combined catch from one floating and one sinking experimental gill net.)

Trapnetting was conducted using standard trap nets composed of two light steel frames measuring 1.8 m x .9 m, covered with 19 mm square black mesh, and with five 76 cm steel round hoops with crow foot throats on the first and third hoops, and with 23 m long lead lines 0.9 to 1.3 m in height. Trap nets were set on shallow sloping areas with the top of the steel frame within 0.3 m of the water surface. The lead line was tied to shore. Trap nets were set late in the afternoon and pulled the following morning. One unit of trap net effort was defined as one trap net fished overnight. Trap net CPUE was calculated as catch of one trap net, by both number and weight, per night.

Attempts were made to measure a sample of each cm size group of each species collected to the nearest mm and to weigh a sample of each size group collected to the nearest g. In some cases, scale samples were collected to estimate age and growth. Scales from trout were collected from above the lateral line posterior to an imaginary line between the posterior end of the dorsal fin and the anterior end of the anal fin. Scales from bass were collected at the end of the pectoral fin as it lay against the body of the fish from above the lateral line. Fins and scales were placed in labeled envelopes and processed later in the lab.

General Data Analysis

Data from all sampled waters are summarized in the attached appendices. Appendix A is a summary of all types and amounts of sampling effort for each individual date that a body of water was investigated. Multi-gear Lowland Lake sampling events are summarized in Appendix B. Catch-per-unit-effort is calculated by individual gear and then by a standard unit of catch for both number and weight of fish. Appendix C includes a summary of all fish numbers, lengths,

weights, condition factors and percentage of catch by species at any given sampling event. Length frequencies summed by cm group of all captured fish species for all sampled waters are included in Appendix D.

RESULTS

C.J. Strike Reservoir

Lowland Lake Sample

A standard lowland lake survey was conducted on April 2, 1998 utilizing 0.75 h of electrofishing, two trap nets and two pairs of floating and sinking gill nets. The water temperature was 12.5°C at 1615 h. The air temperature and local weather was approximately 5° C with high winds and scattered rain showers. Gillnetting was repeated on June 23, 1999 using three pairs of experimental gill nets and three trap nets to specifically address the status of stocked hatchery rainbow trout. The water temperature was 17.5°C during the June collection efforts. Results of the lowland lake sample and the June netting will be reported separately.

Captured gamefish included smallmouth bass *Micropterus dolomieui*, largemouth bass *Micropterus salmoides*, yellow perch *Perca flavescens*, hatchery rainbow trout *Oncorhynchus mykiss*, bluegill *Lepomis macrochirus*, white crappie *Pomoxis annularis*, black crappie *Pomoxis nigromaculatus*, channel catfish *Ictalurus punctatus*, and brown bullhead *Ameiurus nebulosus*. Non-game species collected included bridgelip sucker *Catostomus columbianus*, largescale sucker *Catostomus macrocheilus*, peamouth *Mylocheilus caurinus*, chiselmouth *Acrocheilus alutaceus*, northern pikeminnow *Ptychocheilus oregonensis*, redside shiner *Richardsonius balteatus*, and common carp *Cyprinus carpio*.

April Lowland Lake Sample

Smallmouth Bass

Eleven smallmouth were captured for a total CPUE by number and weight of 13 and 8.27 kg, respectively. A majority of the smallmouth was collected while electrofishing. Our total catch ranged in size from 211 mm to 523 mm. The mean length of smallmouth captured while electrofishing was 328 mm. Electrofishing conducted in May of 1997 resulted in the capture of 20 times more smallmouth (Allen et al. 2000). Water temperature, local weather, and time of year may have all contributed to a lower catch in 1998.

Largemouth Bass

Only one largemouth bass was collected. Although 14 largemouth bass were collected while electrofishing in 1997, it appears past efforts to enhance the population through supplemental stocking and habitat augmentation is having little effect. On numerous occasions regional fisheries staff have contributed to such projects with volunteers and have tried to explain the fundamental limitations of C.J. Strike Reservoir as a largemouth bass fishery. Nonetheless, interest in continuing the stocking and habitat improvement projects re-emerge annually from organized bass fishing clubs.

Yellow Perch

A majority of the yellow perch collected was caught while trapnetting and gillnetting. The perch ranged in length from 124 mm to 305 mm, with a mean of 192 mm. With yellow perch representing nearly 30% of our total catch, C.J. Strike Reservoir should be an excellent source of perch for anglers in 1999.

Hatchery Rainbow Trout

A total of 20 hatchery rainbow trout were captured. The rainbow trout ranged in length from 117 mm to 262 mm, with a mean of 166 mm. All captured rainbow trout appear to be from recent stocking. There have been a considerable number of angler inquiries during the past year concerning poor trout fishing. The absence of larger rainbow trout might indicate poor fingerling carryover.

Bluegill

Only three bluegill were captured, ranging in length from 43 mm to 130 mm. Although our 1998 catch only represented 3.3% of the total bluegill collected in 1997, weather and sampling one-month earlier than 1997 likely affected our catch (Allen et al. 2000). We suspect the multiple strong year classes we observed while electrofishing in 1997 will provide angling opportunities very similar to those in the last several years.

White Crappie

White crappie ranged in length from 102 mm to 284 mm. Although each gear type captured white crappie, a vast majority was caught while gillnetting. The mean length for the crappie caught in gill nets was 129 mm. We predict good fishing for white crappie for the next several years.

Black Crappie

A total of 11 black crappie were captured and ranged in length from 112 mm to 244 mm.

Channel Catfish

Our catch was limited to two, with lengths of 612 mm and 643 mm. Although we were unable to collect smaller channel catfish, sampling conducted in late May of 1997 indicated that other year classes were present (Allen et al. 2000). Our low catch was likely a result of the cool water temperatures during collection efforts. Angling for channel catfish in 1998 should be very similar to 1997.

June Gillnetting and Trapnetting

Yellow Perch

Multiple year classes of yellow perch were collected. The perch ranged in length from 120 mm to 270 mm, very similar to the results of our April lowland lake survey.

Hatchery Rainbow Trout

Only two hatchery rainbow trout were captured. Their lengths were 310 mm and 343 mm. Anglers continue to report poor success in catching rainbow trout. Although we were unable to collect many rainbow trout, the length of the captured fish suggests there was some carryover from 1997 stocking. In 1999 we will tag 4,000 rainbow trout for planting in C.J. Strike to determine which stocking locations have the best rate of return, and to determine when and where the fish are harvested.

White Crappie

A total of 222 white crappie were collected. They ranged in size from 65 mm to 330 mm. We have received mixed reports from anglers, ranging from fair to excellent harvest of crappie.

Channel Catfish

Our catch increased approximately nine times over our April survey results. A total of 19 were captured, ranging in length from 213 mm to 680 mm. Due to their large mean weight of 1,601 g, channel catfish represented 58% of our total net catch by weight. The increased catch as compared to the April sampling is probably a result of the 5°C warmer water temperature measured in July.

Lake Lowell

Lowland Lake Sample

Sampling was conducted on April 9, 1998 utilizing 1.25 h of electrofishing, two units of gillnetting and three units of trapnetting. In addition, 0.75 h of electrofishing was conducted September 30, 1998.

A total of 343 and 158 fish were collected during April and September sampling, respectively. Black crappie, bluegill, bridgelip sucker, brown bullhead, channel catfish, chiselmouth, common carp, hatchery rainbow, lahontan cutthroat trout *Oncorhynchus clarki henshawi*, largemouth bass, largescale sucker, northern pikeminnow, smallmouth bass and yellow perch were represented in the sampling. Nongame species represented 67% of the total catch during the April sample. During September electrofishing, nongame species comprised 15% of the sample.

Lahontan Cutthroat

Lahontan cutthroat represented the most abundant game fish sampled by numbers and weight during April, with a CPUE of 17 fish and 8.5 kg. The Lahontan cutthroat trout sampled were primarily older fish, from 360 to 460 mm. Hatchery releases of Lahontan cutthroat trout have been made since 1995 (Table 1). No Lahontan cutthroat trout were collected during the September sample. Anglers have begun to target these fish during the period of May and June.

Largemouth Bass

The April sampling appears to have been too early to adequately sample largemouth bass due to cold water temperatures. The CPUE was seven fish, and only one bass less than

180 mm was collected. During September the CPUE for largemouth bass was 158 fish for electrofishing only, compared to the CPUE of 7 for all three gear types used during April. Age 0+, 1+, and 2+ bass were well represented in the September sample, indicating successful spawning occurred the past 3 years and bass had good over winter survival during 1996-97.

Smallmouth Bass

Sampling results for smallmouth bass were similar to largemouth. April sampling was likely too early for meaningful results, with a CPUE of only two fish collected. In the September sample smallmouth CPUE was 76 fish. Age 0+ and 1+ bass were well represented in the sample indicating successful spawning during 1998 and over winter survival during 1997-98.

Bluegill

Bluegill was poorly represented in the April sample. In the September sample, CPUE was 65 fish. Age 1+ bluegill were represented in the sample indicating over winter survival. No bluegill over 150 mm was collected during either sampling period.

Yellow Perch

Yellow perch CPUE was 16 fish during the April sample but were not adequately sampled during September. The perch collected were small, with only two fish greater than 200 mm. The presence of age 1+ and older perch during April indicates successful over winter survival.

Black Crappie

Black crappie was present in both spring and fall samples but only in low numbers. Some crappie larger than 200 mm were sampled. These larger crappie should be mature and spawn during 1998 and 1999.

Repeated requests from anglers to continue black crappie introduction into Lake Lowell culminated in a volunteer hook-and-line collection effort at Owyhee Reservoir in Oregon. Collection occurred in late April and resulted in the transfer of approximately 2,500 crappie to Lake Lowell. Future sampling to evaluate the success of this transfer is planned for 2000.

Mann Creek Reservoir

Mann Creek Reservoir is located approximately 13 km north of Weiser, Idaho. The USBOR dam was completed in 1967 and surface area is 115 ha. Storage is primarily for irrigation but water recreation is popular. A 305 mm minimum length limit for bass has been in effect in the reservoir since 1986. Approximately 10,000 catchable rainbow trout are released into the reservoir each year.

Hatchery Trout Evaluation

A tag return study was initiated during 1998 in Mann Creek Reservoir to document the angler harvest of hatchery catchable rainbow trout (200 to 250 mm in size). A total of 900 tags were placed on 10,000 rainbow trout over five stocking dates during 1998 (Table 2). Signs were

placed around the reservoir alerting anglers about the presence of jaw tags and asking for their assistance. Angler tag returns were voluntary, with no reward offered.

Anglers returned a total of 116 tags for an overall harvest rate of 12.9% for the period from initial hatchery release on March 23, 1998 through reporting cutoff on October 31, 1999. Return rates were highest for the release dates during April, May and September (Table 4). Returns were lowest for the March release and intermediate for the October release. Twenty-one (18% of all tag returns) tagged rainbows were captured as holdover fish during 1999, primarily during March through May. Voluntary tag returns by anglers result in an estimated 40-60% return rate of the actual number of tagged fish harvested (Nichols et al. 1991). Therefore, to estimate the total exploitation rate of hatchery rainbow trout we doubled (50% voluntary compliance of tag returns) the actual number of tag returns we received. The resulting estimate of total return to the creel of hatchery trout released in 1998 equaled 25.8%. The 1996-2000 Department Fish Management Plan calls for 40% return to creel for hatchery catchable rainbow. We did not achieve that goal based on the 1998 evaluation. An overall return rate of over 30% could be achieved by managing the fish releases to occur only during April, May and September.

Lowland Lake Sample

Sampling was completed on April 17, 1998 utilizing one h of electrofishing, two units of gill nets and three units of trap nets. Water temperature was 10°C at 0800 hours.

A total of 393 game fish were collected. Black Crappie, wild and hatchery rainbow trout, largemouth bass, and bridgelip sucker were represented in the catch. The overall sample was similar to sampling completed during 1995 (Allen et al. 1998). The CPUE for game fish was 249 during 1998 compared to 264 during 1995. Bridgelip suckers were collected but remained a minor portion of the biomass sampled similar to 1990 (Grunder et al. 1993).

Wild Rainbow (redband) Trout

Wild rainbow trout *Oncorhynchus mykiss gairdneri* were the most numerous species sampled during 1998. Total CPUE had increased from 39 wild rainbow in 1995 (Allen et al. 1998) to 143 during 1998. Large numbers of age 1+, and age 2+ rainbows were present in the sample during 1998. The increase in wild rainbow trout coincided with above normal precipitation from 1995 to 1998. Natural recruitment from upper Mann Creek represents a significant source of rainbow trout to the reservoir fishery.

Hatchery Rainbow Trout

Total CPUE for hatchery rainbow trout was 44. The initial hatchery release during 1998 was March 23. Therefore, our sample probably reflects a large number of these recently released hatchery trout. Few hatchery trout larger than 300 mm were sampled, indicating limited carryover survival from 1997 releases.

Black Crappie

Black Crappie were the second most numerous species sampled in 1998. The CPUE by number and weight was 49 fish and 4.6 kg, respectively. Crappie had declined compared to 1995 sampling (CPUE of 130 fish and 14.0 kg) (Allen et al. 1998). Mean length of crappie during 1998 equaled 177 mm compared to 188mm and 250 mm during 1995 and 1990,

respectively. Water temperature at the time of sampling may have contributed to the lower catch during 1998.

Largemouth Bass

The CPUE for largemouth bass was 28 fish and 20.9 kg. During 1995, CPUE for bass was 55 fish and 13.0 kg (Allen et al. 1998). Electrofishing CPUE indicates largemouth numbers have steadily declined from samples beginning in 1990. Electrofishing CPUE was 79, 54 and 28 bass for samples collected during 1990, 1995 and 1998, respectively. Based on aging data from 1995 (Allen et al. 1998), few of the bass sampled during 1998 were younger than age 4+ (241 mm). Mean length for largemouth bass sampled during 1998 equaled 336 mm. Sampling during 1998 occurred during April with water temperatures near 10° C compared to sampling in 1990 and 1995 that occurred during June with water temperatures in excess of 15° C. The lower water temperatures during 1998 may have reduced largemouth bass CPUE.

Paddock Reservoir

Lowland Lake Sample

Sampling was conducted on April 22, 1998 utilizing one h of electrofishing, two pairs of gill nets and three trap nets. Water temperature was 16° C at 1600 hours.

A total of 467 fish were captured. The total catch was similar to fall 1997 sampling and about double the catch of April 1997 (Allen et al. 2000). Bluegill, brown bullhead, and largemouth bass represented the majority of the catch. Additionally, six pumpkinseed *Lepomis gibbosus* and two hatchery rainbow trout were captured. Hatchery rainbow (surplus steelhead smolts) disappeared from the sample compared to April and October 1997 samples. These fish were either harvested during 1997 or did not survive well through the 1997-1998 winter.

Bluegill

Bluegill CPUE by number was 158, down from fall 1997 sampling (CPUE = 218) but above the CPUE of 33 observed during April 1997. Smaller sized bluegill of probable age 1+ and age 2+ were well represented in the sample.

Brown Bullhead

The CPUE for brown bullhead was 15 and we sampled bullheads from 240 to 370 mm.

Largemouth Bass

During 1998 we observed a strong year class of age 2+ largemouth bass for the first time since 1995 (Allen et al. 2000). As a result of these smaller fish in our sample, the CPUE (331) was the highest observed since restocking in 1993. A dominant year class of bass (310-350 mm) is still present in the population. Anglers harvested more legal bass (305 mm minimum size) during 1998 as this year class recruited into the fishery. Unlike sampling during 1996 and 1997, our data from 1998 does not indicate predation by larger bass is limiting recruitment of age 0+ bass in Paddock Reservoir.

Black Crappie

No black crappie were sampled during 1998. During 1993, crappie were reintroduced into Paddock Reservoir following drought conditions from 1987 to 1992. Restocking in 1993 included 1,400 crappie, 1,168 bluegill, and 432 largemouth bass. Our sampling during 1998 would indicate the 1993 crappie reintroduction was not successful. Volunteer anglers collected crappie from Owyhee Reservoir, Oregon during 1998 for supplemental stocking into Idaho waters. The effort resulted in the release of 2,500 pre-spawned black crappie into Paddock Reservoir during late April. These fish should have spawned during 1998.

Redtop Pond

Lowland Lake Sampling

Redtop Pond is a 14 ha pond located 7.5 km northwest of Caldwell, Idaho. It is a prior gravel pit source, owned by Idaho Department of Transportation. The Department began management of the pond through a 5-year lease beginning January 1, 1998. It is currently managed as a warmwater fishery with walk in access to the general public.

Sampling was conducted on October 15, 1998 utilizing 0.5 h of electrofishing, two pairs of gill nets and two trap nets. This was the initial inventory of fish populations in Redtop Pond.

A total of 470 game fish were captured. Largemouth bass, brown bullhead, bluegill, pumpkinseed, and black crappie represented 59%, 19%, 6%, 8%, and 7% of the sample, respectively. Natural reproduction during 1998 occurred for largemouth bass, bluegill, and black crappie as evidenced by a high numbers of young-of-the-year (YOY) fish. Although no small brown bullhead were captured, a large number of mature fish (280-320 mm) were captured and natural reproduction is expected. No nongame fish were collected.

Claytonia Pond

Electrofishing

In November 1991, the Department purchased 16 ha of land from Idaho Department of Transportation approximately 3 km northwest of Marsing, Idaho. In 1993 a gravel pit located on the parcel was enlarged, subsequently filled with water and stocked with warmwater game fish. It was named Claytonia Pond and is currently managed as a sportsman's access with a warmwater fishery. It is approximately 14 ha in surface area. It is maintained by ground water and also receives irrigation return water.

Sampling was conducted October 1, 1998 utilizing 0.5 h of electrofishing effort. We collected a total of 148 fish. Species sampled included largemouth bass, bluegill, pumpkinseed, black crappie, yellow perch (1 fish) and common carp. Mean size of fish collected was 140, 120, 150, and 100 mm for black crappie, bluegill, largemouth bass, and pumpkinseed, respectively. Few game fish exceeded 150 mm (6 inches). Carp made up only 9% of the sample by number but 85% by weight. A population renovation to eliminate the carp population is planned during spring, 1999.

Crane Falls Lake

Electrofishing

Sampling was conducted on June 10, 1998 utilizing 0.59 h of energized field time. One netter and one boat operator collected the sample from the entire northern shoreline that paralleled the Snake River. Collection efforts and sampling conditions were very similar to those in the survey conducted in 1994 (Allen et al. 1995).

A total of 661 game fish were sampled. Largemouth bass, bluegill, hatchery rainbow trout, black crappie, pumpkinseed, and yellow perch were represented in the sample.

Bluegill

Bluegill were the most abundant species collected. The 1998 electrofishing CPUE for bluegill was six times the rate observed in 1994, 369 versus 55, respectively. The mean length and weight of individual bluegill was very similar to the 1994 results.

Largemouth Bass

A total of 83 largemouth were collected. The mean length of our largemouth catch was slightly less than observed in 1994, 243 mm and 267 mm, respectively. The CPUE by number for 1994 and 1998 was 105 and 139, respectively. Our bluegill catch indicates abundant forage for largemouth bass is present.

Hatchery Rainbow Trout

The electrofishing CPUE for hatchery rainbow trout was 10.07. All of our catch appeared to have been stocked in either the fall of 1997 or the spring of 1998. Historical electrofishing efforts produced very similar catches in terms of size and quantity.

Black Crappie

A total of three black crappie were collected. Historical electrofishing efforts produced very similar catches in terms of size and quantity.

Pumpkinseed

A total of 41 pumpkinseed were captured. The CPUE by number and mean size was 55 and 129 mm, respectively. In 1994 the CPUE by number and mean size was very similar at 55 and 120 mm, respectively. Although these fish are providing a very limited fishery directly, they appear to make up a significant portion of the Crane Falls largemouth bass diet. After several largemouth bass emptied their stomachs in our livewell, numerous partially digested pumpkinseed were observed.

Yellow Perch

There was an eleven-fold decrease between the observed CPUE for yellow perch in 1998 and 1994, 29 versus 359, respectively. The mean length increased from 97 mm in 1994 to 119 mm in 1998.

Deadwood Reservoir

Gillnetting

Two pairs of experimental gill nets were set in Deadwood Reservoir on October 7, 1998 and pulled the following morning.

Gill nets captured hatchery rainbow trout, kokanee *Oncorhynchus nerka kennerlyi*, mountain whitefish *Prosopium williamsoni*, rainbow/cutthroat hybrid, and westslope cutthroat *Oncorhynchus clarki lewisi*.

There has been some discussion concerning the usefulness of annual fall gillnetting in Deadwood as a management tool, especially in terms of managing kokanee. As an alternative, we are considering concentrating on examining spawning fish during August egg collection activities and discontinuing fall gillnetting in 1999. Netting to monitor other species will be conducted in the spring, possibly on a semi-annual basis.

Kokanee

Kokanee were the most abundant species captured and represented 45.6 % and 32.5% of the total catch by number and weight, respectively. Kokanee ranged in length from 190 mm to 345 mm and had a mean length of 258 mm. The observed mean length follows the increasing trend of fall collected samples since a low of 196 mm in 1992 (Allen et al. 1995). Attempts to control access to major spawning tributaries from 1991 to present, pelagic predator introductions starting in 1991 which included Atlantic salmon *Salmo salar* and fall chinook salmon *Onchorhychus tshawytscha,* and several rotenone treatments of spawning tributaries in 1992 appear to be having an effect on the mean length of spawning kokanee (Allen et al. 1996). Communications with anglers indicated they thought large kokanee were more abundant than in past years. During July and August of 1998 we received numerous angler reports of "excellent" kokanee fishing, with claimed creel limits that averaged approximately 360 mm in length. These reports were similar to size in spawning escapement, which averaged 365 mm in 1998. It remains to be seen if adjustments will need to be made to kokanee adult escapement, or pelagic predator escapement to maintain size and numbers of spawners.

Hatchery Rainbow

A total of five hatchery rainbow were collected. The fish ranged in length from 245 mm to 360 mm, with a mean length of 309 mm.

Westslope Cutthroat

The mean length and total number of westslope cutthroat captured was 327 mm and two, respectively. The lengths were 240 mm and 400 mm. Although the stocking of westslope cutthroat fingerlings was discontinued in 1992, netting catches have been very consistent in the years since and indicate natural reproduction is occurring.

Bull Trout Lake

Bull Trout Lake was sampled on June 6, 1998 with two pair of floating and sinking gill nets. The lake was full and had a water temperature of 13.5° C at noon.

A total of 164 game fish were collected. Brook trout *Salvelinus fontinalis*, kokanee, and fall chinook salmon were represented in the sample.

Brook Trout

Brook trout dominated our catch by weight and total number. The gill net CPUE was 72. Brook trout averaged 190 mm in length, with a range of 75 mm to 317 mm. Gillnetting conducted in 1991 and 1992 resulted in very similar catches, 183 mm average ranging from 110 mm to 290 mm, and 189 mm average ranging from 150 mm to 270 mm (Holubetz et al. 1994, Allen et al. 1995b).

Kokanee Salmon

A total of 19 kokanee were captured. The minimum, maximum, and mean length of kokanee was 160 mm, 185 mm and 172 mm. Kokanee are not currently stocked in Bull Trout Lake. Evidently the population that exists is a residual of past stocking, but no such stocking could be found in the historical records. No kokanee were captured while gillnetting in 1991 or 1992.

Fall Chinook Salmon

Between 1984 and 1996 the Department planted 2,050 fall chinook to reduce brook trout numbers while providing anglers an opportunity to catch a large predator. Only one fall chinook was collected while gillnetting in 1998. Based on a comparison of the length frequencies of captured brook trout since 1991, the brook trout population appears relatively unaffected by the predator introduction.

Lucky Peak Reservoir

Gillnetting and Trapnetting

Lucky Peak was sampled utilizing two pairs of gill nets and three trap nets. All nets were set on the evening of May 6, 1998, and pulled the following morning. The weather at the time of sampling was unsettled with high winds and scattered rain showers. The reservoir was approximately two-thirds full.

A total of 56 game fish were collected. Mountain whitefish, hatchery rainbow trout, smallmouth bass, yellow perch, wild rainbow (redband) trout, and fall chinook salmon were represented in the catch. Non-game species collected included bridgelip sucker, chiselmouth, largescale sucker, northern pikeminnow, redside shiner, and tui chub *Gila bicolor*. Yellow perch was the only gamefish caught in the trap nets.

Hatchery Rainbow Trout

A total of 10 hatchery rainbow trout were collected and ranged in length from 250 mm to 350 mm.

Wild Rainbow (redband) Trout

Four wild rainbow were collected and ranged in length from 321 mm to 419 mm. Although the upper Boise River watershed provides a source of wild rainbow trout to Lucky Peak, our netting suggests the wild fish constitute a small portion of the rainbow trout population in Lucky Peak. Past fisheries surveys have also caught few wild rainbow. Netting conducted in 1994 and 1997 resulted in the capture of two wild rainbow each (Allen et al. 1995; Allen et al. 2000).

Fall Chinook Salmon

Fall chinook were first planted in Lucky Peak in 1984. Between 1984 and 1995 there were no documented recaptures from reservoir netting or angler reports. Beginning in 1995, annual fall chinook fingerling plants were initiated. Netting conducted in 1998 resulted in the capture of two chinook, ranging in length from 294 mm to 436 mm. The mean length for chinook captured in 1996, 1997, and 1998, were 281 mm, 334 mm, and 365 mm, respectively (Allen et al. 1997, Allen et al. 1998a). Anglers reported harvesting chinook relatively frequently in 1998, with some reports of fish that approached 3 kg. Based on releases of approximately 6,300 fingerling chinook in 1995 and 1996, Lucky Peak appears capable of producing harvestable fall chinook from fingerling plants. The availability of surplus chinook in 1998 resulted in the stocking of 17,141 fingerlings in June. Lucky Peak Reservoir historical fall chinook stocking information can be found in table 3.

Smallmouth Bass

A total of nine smallmouth bass were captured. The bass ranged in length from 235 mm to 240 mm with a mean length of 309 mm. The CPUE by number for gillnetting was 4.5. Sampling conducted in 1997 captured 24 smallmouth while electrofishing and three while gillnetting (Allen et al. 2000). The mean length of smallmouth collected in 1997 by electrofishing and gillnetting was 238 mm and 317 mm, respectively.

Yellow Perch

A total of seventeen yellow perch were captured. The perch ranged in length from 135 mm to 272 mm.

Deadwood Reservoir Bull Trout Investigations

METHODS

Tributary Weirs

Wild Buck and Basin creeks had picket type weirs constructed and monitored from May 11 to May 16,1998 and from May 19 to May 22, 1998. The weirs were located above the reservoir pool and near bridges for forest road 555. The weirs were constructed to a typical Department design of steel frame and vertical pickets. The steel frames were modified from the design used by Elle et al. (1994) in that the frame was shortened to 5 ft to allow better backcountry transport. The pickets were of ½ inch electrical conduit of various lengths. Two trap-boxes with 200 mm diameter flexible black drainage pipe were located so that one box trapped upstream moving fish and the other trapped downstream migrants. The trap measured 1.0 m by 0.5 m by 0.3 m and was constructed of a pine frame covered with metal hardware cloth with 1.0 cm square mesh. The weirs were checked at least twice daily, cleaned of debris and adjusted for the volume of stream flow. The trap-boxes were monitored twice daily and all fish were identified to species, measured for total length and released.

Deadwood Reservoir Fish Capture

Only trap nets were utilized for reservoir sampling in 1998. The trap nets were a standard Department design as previously described in this report. Trap nets were set in the late PM and checked and moved the following morning. All fish species were identified, measured for total length and released. Any bull trout captured were weighed a fin clip taken. Larger fish were saved to have radio transmitters implanted. Telemetry transmitters were surgically implanted as in Flatter 1997.

RESULTS

Tributary Weirs

Only one fish was captured during the operation of the two weirs in May 1998. A westslope cutthroat trout *Oncorhynchus clarkii clarkii* was captured on May 13, 1998 and was 115 mm in TL. No other fish were observed either above or below the weirs. The weirs did not get breached or overflowed during the sampling period.

The weirs were installed just after the peak of snowpack runoff. We expected to encounter spawning cutthroat and rainbow trout utilizing the two tributaries. The reason for the weir placement was a suspicion that bull trout would follow spawning migration trout to prey on fresh spawn. I suspect that we were too late and any trout had already spawned and returned to the lake. We had used all possible means to enter the drainage as soon as possible given the existing snowpack.

Reservoir Sampling

Deadwood Reservoir was sampled with trap nets from May 12 to May 22, 1998. A total of 41 trap net nights of effort were accomplished by utilizing multiple trap nets each night. Two bull trout were captured with a length and weight of 235 mm, 100 g and 370 mm, 535 g. Capture of other fish species was extremely low. Likely the low catch rates were a result of cold water temperatures.

The larger of the captured bull trout was implanted with an internal radio transmitter to allow for radio tracking. Since we had captured so few bull trout and implanted only one transmitter, no telemetry work was done to locate the one radio later in the year.

Recommendations

1. Increase education efforts to help anglers identify bull trout.

2. Cooperatively conduct a creel survey on Deadwood Reservoir with the Lowman District Ranger District, Boise National Forest when funding is available.

Bull Trout Lake Area Creel Surveys

INTRODUCTION

During the 1998 summer fishing season a creel survey was conducted by the camp hosts operating the Bull Trout Lake Campgrounds. With the assistance of the USFS, Boise National Forest, Lowman Ranger District staff, the stocking of these lakes was evaluated to determine if the return rates of stocked rainbow trout were acceptable. The purpose of the creel survey was to document the return to the angler of stocked rainbow trout in four of the area's lakes. A goal of a 40% return rate of stocked rainbow trout was created to decide if the program was a success. Bull Trout Lake had been stocked by Department in the past but was discontinued due to perceived low return rates of stocked trout. Martin Lake has been stocked for many years with rainbow trout and return rates have been perceived to be acceptable. The Salmon Region of Department has recently added three smaller area ponds on the road into Bull Trout Lake to the stocking schedule.

METHODS

The creel survey was a stratified two-stage probability design and was scheduled to run from July 1 to September 15, 1998. Eight days per month were selected for sampling, which included 4 weekdays and 4 weekend days. The probabilities between the two strata were set equal. The secondary sampling unit chosen was the day length, divided into three units of equal length and with equal probabilities. Each lake was treated as an independent unit and not subdivided into smaller sub-units because the small lake size allowed complete counts. A sampling schedule was randomly selected and provided to the Lowman Ranger District staff. The instantaneous counts were to be taken at each lake followed by individual angler interviews

and then the creel clerk would proceed to the next lake. The camp host, employed by a contractor to the USFS, would do the actual counts and interviews supervised by the forest district staff. The creel clerks would interview anglers to quantify the hours fished by each angler, method of fishing, either bank, boat or float tube, and the anglers catch by species. The collected data were entered into the Department's Creel Census System (McArthur 1992) and estimates of effort and harvest for each lake were created. Future stocking recommendations will consider the estimated percent return to the angler of the stocked rainbow trout, using a 40% return percentage as a goal for each lake. Lakes with less than 40% return of rainbow trout will not be stocked in the future.

RESULTS

Bull Trout Lake

Anglers expended an estimated 3,020 hours of fishing effort on Bull Trout Lake in the summer season of 1998 (Table 4). The majority of hours fished were from the bank and secondly from boats (Table 4). Anglers harvested an estimated 1,684 stocked rainbow trout (Table 5) which equaled 49.6% of the 3,390 rainbow trout stocked. An additional 3,846 brook trout were also harvested from the lake. The average catch rate was estimated at 0.32 rainbow trout per hour and 0.75 brook trout per hour (Table 5). The creel clerks recorded only numbers of fish harvested (kept) so catch rates do not include released fish, thus the catch rates reflect an actual harvest rate.

Martin Lake

Anglers on Martin Lake fished an estimated 1,276 hours from the shore (Table 4). This estimated effort was probably reduced because local campground construction prevented vehicle access to the small lake. The estimated harvest of rainbow trout was quite high at an estimated 1,997 $\pm$ 859 fish (Table 5). A total of 2,290 rainbow trout were stocked which resulted in an 87.2% return of the stocked trout. The catch rate for rainbow trout was estimated at 1.1/hour (Table 5). Some rainbow trout may have carried over from the previous summer and contributed to these returns. Brook trout also contributed an estimated 1,314 fish to the anglers.

Pond # 1

This small lake is the first lake on the left of the road into Bull Trout Lake Campground and is sometimes referred to as Little Bull Trout Lake. A total effort of 1,226 hours was estimated (Table 4) for this little lake in 1998. Harvest of rainbow trout was estimated at 866 and estimated harvest of brook trout was 724 (Table 5). The estimated harvest of rainbow trout exceeded the 450 rainbow trout stocked by almost twice. The low number of anglers interviewed during the season mostly explains this discrepancy. Some trout could have survived from the previous year and contributed to the inflated estimate also.

Pond # 2

Pond # 2 in this study is the second pond along the road and lies on the right-hand side of the road. An estimated 235 hours of fishing effort was calculated for this pond (Table 4). No anglers were interviewed so no estimate of harvest could be calculated. A stocking of 450

rainbow trout was done in 1998. Either the anglers did not know this pond was stocked or it was not accepted as a good place to fish.

Pond # 3

This is the third pond in from the road and nearest to Bull Trout Lake. It was not included in this study because it was wrongly assumed by this author not to be stocked. In fact this pond received 450 rainbow trout. No estimates of pressure or harvest can be made.

RECOMMENDATIONS

1. Continue to stock Bull Trout Lake and increase annual stocking of rainbow trout to 4,500.

2. Continue to stock Martin Lake at 2,750 rainbow trout.

3. Recommend to Salmon Region they continue to stock pond # 1 and increase numbers of trout, if possible.

4. Recommend to Salmon Region that they discontinue stocking the other two ponds in the area.

5. For future creel surveys conducted invest more time into training the volunteer creel clerks. More angler interviews would have allowed more precise estimates of harvest. Also the creel clerks did not record any released fish during the survey. Again this was likely due to inadequate training of the creel clerks by this author.

Table 1. Hatchery releases of Lahontan cutthroat trout into Lake Lowell during 1995 to 1998.

Lahontan Cutthroat Releases		
Date	Number	Size
May 1995	25,000	Fry
Sept. 1995	7,500	Fingerling
Sept. 1996	42,500	Fingerling
Sept. 1997	22,700	Fingerling
July 1998	84,000	Fry
Sept. 1998	12,900	Fingerling

Table 2. Angler return rate of hatchery rainbow trout marked with jaw tags in Mann Creek Reservoir during 1998.

Date released	Number released	Number returned	Percentage
March 23	200	16	8.0
April 22	200	29	14.5
May 20	100	15	15.0
September 29	200	32	16.0
October 15	200	24	12.0
Total	900	116	12.9

Table 3. Hatchery releases of fall chinook salmon into Lucky Peak during 1984 to 1998

Fall Chinook Releases		
Date	Number	Size
October 1984	2,034	Fingerling
July 1995	5,280	Fingerling
June 1996	7,250	Fingerling
June 1998	17,141	Fingerling

Table 4. Hours of fishing pressure estimated from a roving creel survey conducted July to mid-September 1998 on Bull Trout Lake and Martin Lake and two smaller ponds stocked with catchable rainbow trout.

Water	Hours of Fishing Pressure from Bank Anglers (±95% C.I.)	Hours of Fishing Pressure from Boat Anglers (±95% C.I.)	Hours of Fishing Pressure from Float Tube Anglers (±95% C.I.)	Total Hours of Fishing Pressure for Season (±95% C.I.)
Bull Trout Lake	1430 (1413)	1032 (692)	558 (445)	3020 (1635)
Martin Lake	1276 (680)	0	0	1276 (680)
Pond # 1	860 (924)	366 (436)	0	1226 (1022)
Pond # 2	235 (274)	0	0	235 (274)

Table 5. Harvest and catch rates estimated from a roving creel survey conducted July to mid September 1998 on Bull Trout Lake and Martin Lake and two smaller ponds stocked with catchable rainbow trout.

Water	Rainbow Trout Harvest (+95%C.I.)	Brook Trout Harvest (+95%C.I.)	Season Trout Harvest (+95%C.I.)	Rainbow Trout Catch Rate	Brook Trout Catch Rate	Seasonal Average Catch Rate
Bull Trout Lake	1684 (1757)	3861 (2694)	5546 (3683)	0.32	0.75	1.07
Martin Lake	1997 (859)	1314 (1090)	3311 (1660)	1.14	0.58	1.72
Pond # 1	866 (958)	724 (731)	1590 (1210)	0.35	0.65	1.00
Pond # 2	N/A	N/A	N/A	N/A	N/A	N/A

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Appendix A. Units of sampling effort[1] for Lowland Lakes sampling, 1998.

STREAM_NAM	DATE	EF	FGN	GN	TN
BULL TROUT L	6/30/98			2	
C J STRIKE RES	4/2/98	0.75		2	2
C J STRIKE RES	6/23/98			3	3
CLAYTONIA P	10/1/98	0.50			
CRANE CREEK RES	6/25/98			2	2
CRANE FALLS RES	6/10/98	0.59			
DEADWOOD RES	10/7/98			2	
INDIAN CREEK RES	5/13/98			2	2
INDIAN CREEK RES	5/15/98	0.66			
LAKE LOWELL	4/9/98	1.25	2	2	3
LAKE LOWELL	9/30/98	0.75			
LUCKY PEAK RES	5/7/98			2	3
MANNS CREEK RES	4/17/98	1	2	2	3
PADDOCK RES	4/22/98	1	2	2	3
REDTOP POND	10/15/98	0.5		2	2

[1]Units of effort: Electrofish = 1 h of activated electrode time; Gill net = 1 floating and 1 sinking experimental gill net set overnight; Trap net = 1 trap net set overnight.

Appendix B. Electrofishing, gill net, and trap net catch-per-effort (CPUE) by number and weight for lowland lake sampling 1998.

WATER	DATE	SPECIES	EF CPUE (Number)	GN CPUE (Number)	TN CPUE (Number)	TOTAL CPUE (Number)	EF CPUE (Weight kg)	GN CPUE (Weight kg)	TN CPUE (Weight kg)	Total CPUE (Weight kg)
C J STRIKE RES										
	4/2/98									
		Black crappie	8	2	1	11	0.15	0.04		
		Bluegill	4				0.04			
		Bridgelip sucker	65	5	1	70	7.99	1.54	0.29	9.82
		Channel catfish		1				2.85		
		Chiselmouth	21	6	1	28	0.17	0.25	0.02	0.44
		Common carp	1	1						
		Hatchery rainbow	73	10			3.69	0.48		
		Largemouth bass	1				0.27			
		Largescale sucker	163	36	3	201	21.46	34.41	2.48	58.35
		Northern pikeminnow	3	22				4.64		
		Peamouth		12				1.15		
		Redside shiner			1					
		Smallmouth bass	12	1	1	13	7.56	0.26	0.45	8.27
		White crappie	5	26	6	37	0.63	0.74	0.04	1.41
		Wild rainbow/redband	1				1.12			
		Yellow perch	15	42	51	107	0.16	4.02	4.56	8.74
		Total	373	160	63	467	43.23	50.37	7.85	87.03
LAKE LOWELL										
	4/9/98									
		Black crappie	2		1		0.02		0.00	
		Bluegill	5				0.00			
		Bridgelip sucker	2				0.20			
		Brown bullhead	2	1	6	9	0.30	0.11	1.85	2.26
		Channel catfish	1	1			0.30	0.00		
		Chiselmouth	1	1			0.08	0.20		
		Common carp	16	4	1	21	15.05	1.14	0.20	16.39
		Hatchery rainbow		2				0.33		
		Lahontan cutthroat	2	15			0.76	7.87		
		Largemouth bass	6	1			1.79	0.38		
		Largescale sucker	78	29	1	108	29.79	8.60	0.39	38.77
		Northern pikeminnow		5				0.75		
		Smallmouth bass	1	1	0	2	0.00	0.00	0.00	0.00
		Yellow perch	15	1	0	16	0.00	0.06	0.01	0.07
		Total	132	57	10	155	48.29	19.43	2.46	57.50

MANNS CREEK RES									
	4/17/98								
	Black crappie	29	15	5	49	2.19	1.56	0.84	4.59
	Bridgelip sucker		5	0			3.80	0.37	
	Hatchery rainbow	10	19	0	29	1.78	3.59	0.05	5.42
	Largemouth bass	27	1	0	28	20.07	0.65	0.18	20.91
	Wild rainbow/redband	123	20			3.35	4.85		
	Total	189	60	6	106	27.40	14.46	1.44	30.92
PADDOCK RES									
	4/22/98								
	Bluegill	151	2	5	158	11.79	0.50	1.32	13.62
	Brown bullhead	4	7	4	15	2.06	4.74	1.64	8.45
	Hatchery rainbow		1				1.25		
	Largemouth bass	136	19	3	158	40.81	7.94	1.15	49.90
	Pumpkinseed	5		0		0.29		0.05	
	Total	296	29	12	331	54.95	14.44	4.17	71.97
REDTOP POND									
	10/15/98								
	Black crappie	116	3				0.24		
	Bluegill	52	2			2.52	0.18		
	Brown bullhead	52	59			21.37	25.61		
	Largemouth bass	472	22			3.02	9.24		
	Pumpkinseed	48	6			2.86	0.40		
	Total	740	92			29.77	35.67		

Appendix C. Number of fish collected, minimum and maximum length, mean length, weight and condition factor and standard errors, catch-per-unit-effort (CPUE) and percent of total by number and weight for fish collected during lowland lake sampling, 1998.

Water / Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
BULL TROUT L													
6/30/98													
Gill Net													
Brook trout	144	75	317	190	2	92	10	1.03	0.08	72.00	4.98	87.80	90.08
Fall chinook salmon	1	317	317	317		310		0.97		0.50	0.16	0.61	2.81
Kokanee salmon	19	160	185	172	2	41	1	0.82	0.01	9.50	0.39	11.59	7.12
Total	164									82.00	5.52		
C J STRIKE RES													
4/2/98													
Electrofishing													
Bridgelip sucker	49	97	361	219	9	163	27	0.92	0.03	65.33	7.99	17.50	18.49
Chiselmouth	16	137	211	170	5	40	8	1.08	0.01	21.33	0.17	5.71	0.38
Common carp	1	546	546	546						1.33		0.36	
Hatchery rainbow	55	102	361	165	6	92	31	0.90	0.04	73.33	3.69	19.64	8.53
Largemouth bass	1	262	262	262		205		1.14		1.33	0.27	0.36	0.63
Largescale sucker	122	76	602	194	12	70		1.02		162.67	21.46	43.57	49.64
Northern pikeminnow	2	107	147	127	20					2.67		0.71	
Smallmouth bass	9	211	523	328	28	662	241	1.42	0.06	12.00	7.56	3.21	17.49
White crappie	4	102	259	178	41	223	8	1.48	0.16	5.33	0.63	1.43	1.46
Wild rainbow/redband	1	406	406	406		837		1.25		1.33	1.12	0.36	2.58
Yellow perch	11	91	193	113	9					14.67	0.16	3.93	0.37
Total	280									373.33	43.23		
Gill Net													
Black crappie	3	112	135	122	7	27	9	1.41	0.25	1.50	0.04	0.94	0.08
Bridgelip sucker	9	99	406	323	31	391	63	2.07	1.03	4.50	1.54	2.81	3.06
Channel catfish	2	612	643	628	15	2850	350	1.15	0.06	1.00	2.85	0.63	5.66
Chiselmouth	12	160	414	260	22	138	49	0.91	0.05	6.00	0.25	3.75	0.50
Common carp	1	462	462	462						0.50		0.31	
Hatchery rainbow	19	117	262	166	7	79	29	1.08	0.06	9.50	0.48	5.94	0.96
Largescale sucker	71	163	577	453	11	1020	83	1.23	0.21	35.50	34.41	22.19	68.30
Northern pikeminnow	43	97	599	338	17	348	101	1.76	0.98	21.50	4.64	13.44	9.21
Peamouth	24	190	378	302	10	418	274	1.21	0.36	12.00	1.15	7.50	2.28

Water	Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
	Smallmouth bass	1	328	328	328		575		1.63		0.50	0.26	0.31	0.51
	White crappie	51	107	284	129	5	31	8	1.09	0.03	25.50	0.74	15.94	1.46
	Yellow perch	84	135	279	192	4	96	7	1.18	0.02	42.00	4.02	26.25	7.98
	Total	320									160.00	50.37		
	Trap Net													
	Black crappie	2	224	231	228	3					1.00		1.60	
	Bridgelip sucker	1	386	386	386						0.50	0.29	0.80	3.67
	Chiselmouth	1	160	160	160						0.50	0.02	0.80	0.30
	Largescale sucker	6	325	536	465	33					3.00	2.48	4.80	31.64
	Redside shiner	1	114	114	114						0.50		0.80	
	Smallmouth bass	1	366	366	366		900		1.84		0.50	0.45	0.80	5.73
	White crappie	12	109	241	165	13					6.00	0.04	9.60	0.54
	Yellow perch	101	124	305	190	4					50.50	4.56	80.80	58.12
	Total	125									62.50	7.85		
	6/23/98													
	Gill Net													
	Black crappie	1	190	190	190		120		1.75		0.33	0.04	0.25	0.23
	Bluegill	1	179	179	179		115		2.01		0.33	0.04	0.25	0.22
	Bridgelip sucker	12	176	340	255	15					4.00		2.95	
	Brown bullhead	1	210	210	210		185		2.00		0.33	0.06	0.25	0.35
	Channel catfish	19	213	680	468	33	1601	269	1.20	0.05	6.33	10.14	4.67	58.19
	Chiselmouth	21	182	323	235	10					7.00		5.16	
	Common carp	9	554	725	643	16					3.00		2.21	
	Hatchery rainbow	2	310	343	327	17	350	30	1.01	0.07	0.67	0.23	0.49	1.34
	Largescale sucker	128	162	593	392	9					42.67		31.45	
	Northern pikeminnow	30	158	486	247	15					10.00		7.37	
	Smallmouth bass	2	280	296	288	8	278	18	1.16	0.02	0.67	0.19	0.49	1.06
	White crappie	121	105	330	188	5	120	11	1.29	0.03	40.33	4.87	29.73	27.95
	Yellow perch	60	130	270	197	5	93	7	1.12	0.04	20.00	1.86	14.74	10.65
	Total	407									135.67	17.43		
	Trap Net													
	Black crappie	6	115	280	157	25	83	48	1.47	0.04	2.00	0.17	3.37	6.69
	Bridgelip sucker	2	165	357	261	96					0.67		1.12	
	Brown bullhead	3	254	287	270	10	313	29	1.59	0.04	1.00	0.31	1.69	12.66
	Chiselmouth	8	142	182	156	5					2.67		4.49	

Water / Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Largescale sucker	11	148	482	330	45					3.67		6.18	
Northern pikeminnow	6	152	170	164	3					2.00		3.37	
Smallmouth bass	2	142	270	206	64	163	103	1.72	0.37	0.67	0.11	1.12	4.38
White crappie	101	65	265	146	3	45	3	1.34	0.04	33.67	1.44	56.74	58.34
Yellow perch	39	120	198	140	2	34	2	1.21	0.05	13.00	0.44	21.91	17.93
Total	178									59.33	2.48		
CLAYTONIA P													
10/1/98													
Electrofishing													
Black crappie	27	85	220	138	9	88	15	1.66	0.06	53.85	3.28	18.24	3.65
Bluegill	32	60	175	117	6	63	4	2.35	0.07	63.82	2.74	21.62	3.05
Common carp	14	320	450	400	10	1007	93	1.55	0.10	75.79	76.33	9.46	84.84
Largemouth bass	34	90	330	145	11	123	43	1.35	0.04	67.81	5.27	22.97	5.86
Pumpkinseed	40	10	130	102	3	33	3	151.34	140.77	79.78	2.20	27.03	2.45
Yellow perch	1	160	160	160		68		1.66		1.99	0.14	0.68	0.15
Total	148									343.04	89.97		
CRANE CREEK RES													
6/25/98													
Gill Net													
Black crappie	71	158	228	199	2	109	3	1.38	0.02	56.00	6.07	15.64	17.44
Bridgelip sucker	3	190	386	263	62					1.50		0.66	
Brown bullhead	15	134	195	172	5	99	8	1.90	0.06	7.50	0.72	3.30	2.07
Channel catfish	7	145	392	264	34	233	74	0.95	0.06	3.50	0.81	1.54	2.34
Common carp	54	195	519	374	10					27.00		11.89	
Largemouth bass	1	250	250	250		220		1.41		0.50	0.11	0.22	0.32
White crappie	303	115	240	193	1	99	1	1.38	0.01	273.50	27.09	66.74	77.83
Total	454									369.50	34.80		
Trap Net													
Black crappie	46	145	220	182	3	85	4	1.36	0.02	23.00	1.99	32.86	10.47
Brown bullhead	12	132	230	197	7	109	9	1.41	0.06	6.00	0.68	8.57	3.56
Common carp	3	287	612	503	108					1.50		2.14	
White crappie	79	140	245	189	3	76	12	1.31	0.02	172.00	16.36	56.43	85.97
Total	140									202.50	19.02		
CRANE FALLS RES													
6/10/98													
Electrofishing													
Black crappie	3	125	196	160	20	93	22	2.94	1.60	5.03	0.47	1.18	0.66
Bluegill	105	51	190	111	3	41	4	2.14	0.05	369.13	14.26	41.18	20.02
Hatchery rainbow	6	224	300	255	11	163	17	0.98	0.05	10.07	1.64	2.35	2.30
Largemouth bass	83	66	423	243	12	358	42	1.48	0.05	139.26	48.06	32.55	67.47

Appendix C. Continued

Water / Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Pumpkinseed	41	76	180	129	4	55	5	2.29	0.06	109.06	6.00	16.08	8.42
Yellow perch	17	80	205	119	9	31	7	1.35	0.09	28.52	0.81	6.67	1.13
Total	255									661.07	71.22		
DEADWOOD RES													
10/7/98													
Gill Net													
Hatchery rainbow	5	245	360	309	24	273	109	1.03	0.01	2.50	0.41	5.56	3.45
Kokanee salmon	41	190	345	258	7	188	14	1.06	0.08	20.50	3.86	45.56	32.48
Mountain whitefish	31	240	405	329	7	384	28	1.02	0.02	15.50	5.95	34.44	50.06
Rainbow X cutthroat	1	330	330	330		300		0.83		0.50	0.15	1.11	1.26
Westslope cutthroat	12	240	400	327	15	294	39	0.95	0.02	6.00	1.51	13.33	12.74
Total	90									45.00	11.88		
INDIAN CREEK RES													
5/13/98													
Gill Net													
Bluegill	2	125	148	137	12	55	15	2.10	0.06	1.00	0.06	3.45	0.71
Brown bullhead	1	258	258	258		320		1.86		0.50	0.16	1.72	2.06
Channel catfish	1	546	546	546		2100		1.29		0.50	1.05	1.72	13.50
Largemouth bass	54	157	312	255	4	241	10	1.40	0.01	27.00	6.51	93.10	83.74
Total	58									29.00	7.78		
5/15/98													
Electrofishing													
Bluegill	37	40	285	106	7	41	23	1.16	0.21	55.72	2.27	22.02	4.58
Largemouth bass	131	140	315	252	3	239	8	1.39	0.02	197.29	47.17	77.98	95.42
Total	168									253.01	49.44		
LAKE LOWELL													
4/9/98													
Black crappie	2	115	125	120	5	15	14	0.95	0.95	1.60	0.02	1.21	0.05
Bluegill	6	52	130	105	14	0	0	0.00	0.00	4.80	0.00	3.64	0.00
Bridgelip sucker	3	222	387	301	48	83	83	0.32	0.32	2.40	0.20	1.82	0.41
Brown bullhead	3	127	265	219	46	85	85	0.46	0.46	2.40	0.30	1.82	0.61
Channel catfish	1	360	360	360		370		0.79		0.80	0.30	0.61	0.61
Chiselmouth	1	222	222	222		104		0.95		0.80	0.08	0.61	0.17
Common carp	20	345	560	479	14	1185	146	1.04	0.11	16.00	15.05	12.12	31.17
Lahontan cutthroat	3	364	425	396	18	190	190	0.30	0.30	2.40	0.76	1.82	1.58
Largemouth bass	8	110	370	258	29	280	104	1.09	0.25	6.40	1.79	4.85	3.71
Largescale sucker	98	120	547	462	5	618	51	0.61	0.05	78.40	29.79	59.39	61.68
Smallmouth bass	1	360	360	360		0		0.00		0.80	0.00	0.61	0.00
Yellow perch	19	77	200	112	8	0	0	0.00	0.00	15.20	0.00	11.52	0.00

Appendix C. Continued

Water	Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Total		165									132.00	48.29		
	Floating Gill Net													
	Black crappie	3	202	300	250	28	325	111	1.90	0.04	1.50	0.49	8.57	11.32
	Brown bullhead	1	263	263	263		300		1.65		0.50	0.09	2.86	2.15
	Channel catfish	5	560	630	598	15	0	0	0.00	0.00	2.50	0.00	14.29	0.00
	Common carp	9	430	500	458	8	0	0	0.00	0.00	4.50	1.23	25.71	28.45
	Largescale sucker	17	300	505	440	14	0	0	0.00	0.00	8.50	2.50	48.57	58.08
	Total	35									17.50	4.31		
	Gill Net													
	Brown bullhead	1	305	305	305		0		0.00		0.50	0.11	0.88	0.56
	Channel catfish	1	460	460	460		0		0.00		0.50	0.00	0.88	0.00
	Chiselmouth	2	233	294	264	30	195	75	1.01	0.06	1.00	0.20	1.75	1.00
	Common carp	7	450	535	482	11	0	0	0.00	0.00	3.50	1.14	6.14	5.89
	Hatchery rainbow	3	237	366	284	41	220	155	0.66	0.33	1.50	0.33	2.63	1.70
	Lahontan cutthroat	29	230	462	385	7	556	25	0.95	0.02	14.50	7.87	25.44	40.49
	Largemouth bass	2	262	305	284	22	380	80	1.64	0.02	1.00	0.38	1.75	1.96
	Largescale sucker	57	373	524	466	5	0	0	0.00	0.00	28.50	8.60	50.00	44.24
	Northern pikeminnow	10	218	320	279	11	150	39	0.73	0.16	5.00	0.75	8.77	3.85
	Smallmouth bass	1	465	465	465		0		0.00		0.50	0.00	0.88	0.00
	Yellow perch	1	220	220	220		120		1.13		0.50	0.06	0.88	0.31
	Total	114									57.00	19.43		
	Trap Net													
	Black crappie	2	233	250	242	8	0	0	0.00	0.00	0.67	0.00	6.90	0.00
	Brown bullhead	18	274	326	288	3	321	14	1.33	0.02	6.00	1.85	62.07	75.39
	Common carp	4	352	443	404	20	114	114	0.18	0.18	1.33	0.20	13.79	8.18
	Largescale sucker	3	460	485	476	8	0	0	0.00	0.00	1.00	0.39	10.34	15.96
	Smallmouth bass	1	400	400	400		0		0.00		0.33	0.00	3.45	0.00
	Yellow perch	1	158	158	158		35		0.89		0.33	0.01	3.45	0.48
	Total	29									9.67	2.46		
	9/30/98													
	Electrofishing													
	Black crappie	4	80	300	141	53	460		1.70		21.29	2.45	2.53	2.20
	Bluegill	21	50	145	101	6	25	3	1.55	0.07	65.19	1.24	13.29	1.12
	Common carp	12	180	545	463	27	1483	72	3.20	1.93	35.92	53.28	7.59	47.78
	Largemouth bass	66	60	355	130	8	96	26	1.24	0.11	158.31	8.81	41.77	7.90
	Largescale sucker	10	280	545	477	25	1037	116	0.93	0.04	41.24	42.77	6.33	38.35
	Redside shiner	1	130	130	130		20		0.91		1.33	0.03	0.63	0.02
	Smallmouth bass	43	65	235	142	7	60	6	1.13	0.04	75.83	2.94	27.22	2.64
	Yellow perch	1	85	85	85						2.66		0.63	
	Total	158									401.76	111.52		

Water / Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
LUCKY PEAK RES													
5/7/98													
Gill Net													
Bridgelip sucker	17	187	360	293	12	248	28	0.92	0.01	8.50	2.10	5.56	3.90
Chiselmouth	89	170	340	255	5	193	10	1.07	0.02	44.50	8.54	29.08	15.87
Fall chinook salmon	2	294	436	365	71	455	235	0.85	0.02	1.00	0.46	0.65	0.85
Hatchery rainbow	10	250	353	323	10	395	29	1.15	0.02	5.00	1.98	3.27	3.67
Largescale sucker	79	230	528	360	8	519	35	0.98	0.01	39.50	20.48	25.82	38.05
Mountain whitefish	14	220	370	318	11	311	21	0.99	0.07	7.00	2.18	4.58	4.05
Northern pikeminnow	74	175	512	331	8	382	28	0.94	0.02	37.00	14.15	24.18	26.28
Redside shiner	1	131	131	131		30		1.33		0.50	0.01	0.33	0.03
Smallmouth bass	9	235	420	309	22	526	135	1.50	0.05	4.50	2.37	2.94	4.39
Wild rainbow/redband	4	321	419	378	21	518	62	0.96	0.04	2.00	1.03	1.31	1.92
Yellow perch	7	145	272	221	19	151	31	1.27	0.05	3.50	0.53	2.29	0.99
Total	306									153.00	53.82		
Trap Net													
Bridgelip sucker	8	255	431	336	20	358	65	0.90	0.07	2.67	0.96	33.33	53.00
Chiselmouth	3	174	234	200	18	72	23	0.83	0.14	1.00	0.09	12.50	5.21
Largescale sucker	1	360	360	360		400		0.86		0.33	0.15	4.17	8.32
Northern pikeminnow	1	380	380	380		500		0.91		0.33	0.17	4.17	9.36
Tui chub	1	330	330	330		540		1.50		0.33	0.18	4.17	9.94
Yellow perch	10	135	260	184	13	78	24	0.95	0.08	3.33	0.26	41.67	14.17
Total	24									8.00	1.81		
MANNS CREEK RES													
4/17/98													
Electrofishing													
Black crappie	29	70	260	141	11	81	17	1.87	0.43	29.00	2.19	15.34	7.99
Hatchery rainbow	10	205	298	247	12	177	24	1.18	0.04	10.00	1.78	5.29	6.49
Largemouth bass	27	170	520	337	15	739	113	1.57	0.04	27.00	20.07	14.29	73.27
Wild rainbow/redband	123	60	330	123	4	48	13	1.05	0.04	123.00	3.35	65.08	12.25
Total	189									189.00	27.40		
Floating Gill Net													
Black crappie	3	235	250	242	4	230	19	1.61	0.04	1.50	0.34	3.80	3.20
Bridgelip sucker	1	470	470	470		1300		1.25		0.50	0.60	1.27	5.59
Hatchery rainbow	30	220	360	283	6	258	18	1.08	0.02	15.00	3.71	37.97	34.58
Largemouth bass	1	370	370	370		790		1.56		0.50	0.40	1.27	3.77
Wild rainbow/redband	44	185	365	290	6	260	14	1.06	0.04	22.00	5.67	55.70	52.87
Total	79									39.50	10.73		
Gill Net													
Black crappie	30	100	250	178	7	105	13	1.60	0.04	15.00	1.56	25.21	10.81
Bridgelip sucker	10	235	470	395	20	750	88	1.17	0.05	5.00	3.80	8.40	26.29

Water / Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Hatchery rainbow	37	185	325	256	6	190	12	1.08	0.04	18.50	3.59	31.09	24.82
Largemouth bass	2	235	390	313	78	712	538	1.72	0.38	1.00	0.65	1.68	4.53
Wild rainbow/redband	40	167	382	282	7	241	15	1.03	0.05	20.00	4.85	33.61	33.55
Total	119									59.50	14.46		
Trap Net													
Black crappie	15	100	260	208	11	165	21	1.59	0.06	5.00	0.84	83.33	58.67
Bridgelip sucker	1	450	450	450		1100		1.21		0.33	0.37	5.56	25.52
Hatchery rainbow	1	234	234	234		140		1.09		0.33	0.05	5.56	3.44
Largemouth bass	1	335	335	335		568		1.51		0.33	0.18	5.56	12.37
Total	18									6.00	1.44		
PADDOCK RES													
4/22/98													
Electrofishing													
Bluegill	151	35	310	123	5	78	9	1.66	0.11	151.00	11.79	51.01	21.47
Brown bullhead	4	240	363	282	28	526	176	2.13	0.03	4.00	2.06	1.35	3.74
Largemouth bass	136	77	368	286	7	436	21	1.53	0.06	136.00	40.81	45.95	74.26
Pumpkinseed	5	80	167	127	17	58	26	1.76	0.49	5.00	0.29	1.69	0.53
Total	296									296.00	54.95		
Floating Gill Net													
Brown bullhead	11	220	383	318	14	589	114	1.67	0.26	5.50	3.40	15.07	21.05
Hatchery rainbow	3	450	465	460	5	1450	87	1.49	0.10	1.50	2.17	4.11	13.47
Largemouth bass	59	285	360	327	2	186	34	0.54	0.10	29.50	10.57	80.82	65.48
Total	73									36.50	16.14		
Gill Net													
Bluegill	3	185	247	210	19	341	120	3.36	0.28	1.50	0.50	5.26	3.48
Brown bullhead	14	280	375	323	7	662	88	1.83	0.21	7.00	4.74	24.56	32.86
Hatchery rainbow	2	427	442	435	8	1250	0	1.53	0.08	1.00	1.25	3.51	8.66
Largemouth bass	38	298	365	338	2	286	52	0.75	0.14	19.00	7.94	66.67	55.01
Total	57									28.50	14.44		
Trap Net													
Bluegill	15	180	227	201	3	261	17	3.16	0.07	5.00	1.32	40.54	31.72
Brown bullhead	12	265	333	295	5	453	71	1.83	0.30	4.00	1.64	32.43	39.41
Largemouth bass	9	315	350	331	4	0	0	0.00	0.00	3.00	1.15	24.32	27.67
Pumpkinseed	1	184	184	184		150		2.41		0.33	0.05	2.70	1.20
Total	37									12.33	4.17		
REDTOP POND													
10/15/98													
Electrofishing													
Black crappie	28	68	80	73	1					116.00		8.24	

Appendix C. Continued

Water	Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
	Bluegill	26	128	189	143	3	54	3	1.99	0.08	52.00	2.52	7.65	8.47
	Brown bullhead	26	240	335	293	5	414	18	1.66	0.08	52.00	21.37	7.65	71.78
	Largemouth bass	236	48	265	77	2	154	33	1.69	0.07	472.00	3.02	69.41	10.15
	Pumpkinseed	24	114	153	136	3	58	3	2.26	0.07	48.00	2.86	7.06	9.61
	Total	340									740.00	29.77		
	Gill Net													
	Black crappie	6	165	205	185	7	120	12	1.60	0.01	3.00	0.24	4.62	0.67
	Bluegill	4	140	160	150	6	85	20	2.38	0.32	2.00	0.18	3.08	0.50
	Brown bullhead	64	280	320	302	1	438	8	1.59	0.02	58.50	25.61	49.23	71.80
	Largemouth bass	44	125	490	280	14	439	69	1.61	0.03	22.00	9.24	33.85	25.91
	Pumpkinseed	12	105	155	138	6	71	8	2.61	0.15	6.00	0.40	9.23	1.12
	Total	130									91.50	35.67		

Appendix D. Number collected by angling, electrofishing, gillnetting and trap netting, and relative weight by water and size group of fish collected during lowland lake sampling 1998.

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
BULL TROUT L									
	6/30/98								
		Brook trout							
			7			1			
			8			1			
			10			1			
			13			2			
			16			7			
			17			16			
			18			39			
			19			38			
			20			13			
			21			8			
			22			6			
			23			6			
			24			2			
			25			2			
			30			1			
			31			1			
		Fall chinook salmon							
			31			1			
		Kokanee salmon							
			16			5			
			17			9			
			18			5			
C J STRIKE RES									
	4/2/98								
		Black crappie							
			11		1	2			99.25
			12		4				87.60
			13			1			133.51
			22				1		
			23				1		
			24		1				
		Bluegill							
			4		2				
			13		1				64.76
		Bridgelip sucker							
			9		1	1			
			12		1				
			13		2				
			14		1				
			16		2				
			17		6				
			18		4				
			19		9				
			20		2				
			21		3				
			22		1				
			25		4				
			26		1	1			
			27		1				
			28		2				
			29		1				

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			30		3				
			31		1				
			32		2	1			
			33			1			
			35			1	1		
			36		1	1			
			38			2	1		
			40			1			
		Channel catfish							
			61			1			102.21
			64			1			111.46
		Chiselmouth							
			13		1				
			14		1				
			15		3				
			16		2	3	1		
			17		4				
			18		3				
			19			1			
			20		1				
			21		1				
			26			1			
			27			2			
			28			1			
			30			3			
			41			1			
		Common carp							
			46			1			
			54		1				
		Hatchery rainbow							
			10		1				
			11			1			
			12		4				
			13		1	2			78.57
			14		18				78.85
			15		9	2			112.67
			16		7	8			92.97
			17		5	2			67.53
			18		4	3			115.45
			22		1				
			24		2				93.29
			26		1	1			97.20
			27		1				74.61
			36		1				83.40
		Largemouth bass							
			26		1				81.92
		Largescale sucker							
			7		1				
			8		3				
			9		15				
			10		19				
			11		10				
			12		16				
			13		2				
			14		6				
			16		1	1			
			17		4				

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			18		2	1			
			19		6				
			20		3				
			21		3				
			22		2	1			
			23		1				
			24		2				
			27		3	1			
			28		1				
			29			2			
			30		1	1			
			31		1				
			32			2	1		
			33		1	3			
			34		1				
			35		1				
			37		1				
			38		1	2			
			39			2			
			40			1			
			41		2				
			42		1	1	1		
			43		3	5			
			44		1	4			
			45			4			
			46			3	1		
			47		2	7			
			48			3			
			49		1	2			
			50			4	1		
			51			2			
			52		1	4			
			53		1	3	2		
			54			4			
			55		1	4			
			56			2			
			57		1	2			
			60		1				
		Peamouth							
			19			2			
			20			1			
			27			2			
			29			3			
			30			4			
			31			3			
			32			2			
			33			4			
			34			1			
			35			1			
			37			1			
		Redside shiner							
			11				1		
		Smallmouth bass							
			21		1				89.99
			29		2				89.04
			30		1				85.37
			32		1	1			104.74

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			33		3				108.93
			36				1		127.59
			52		1				109.57
		White crappie							
			10		1	2	1		85.60
			11		1	24	3		97.68
			12			15	1		93.98
			13			6			97.44
			14			1			110.25
			17				1		
			18				1		
			19			1	3		
			21				1		
			23		1				116.92
			24				1		
			25		1				91.75
			27			1			54.22
			28			1			104.18
		Wild rainbow/redband							
			40		1				108.52
		Yellow perch							
			9		4				
			10		5				
			12				3		
			13		1	3	19		99.20
			14			16	7		85.50
			15			6	4		89.53
			16			1	5		101.64
			17			1	4		77.54
			18			9	5		89.01
			19		1	9	5		84.90
			20			12	6		82.75
			21			8	10		79.24
			22			3	15		80.93
			23			5	9		86.08
			24			6	5		83.47
			25			2	1		94.28
			26			2	1		88.02
			27			1	1		89.25
			30				1		
	6/23/98								
		Black crappie							
			11				1		106.17
			13				4		115.15
			19			1			118.78
			28				1		86.58
		Bluegill							
			17			1			92.10
		Bridgelip sucker							
			16				1		
			17			1			
			20			1			
			21			3			
			23			1			
			25			1			
			27			1			
			29			1			

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			30			1			
			33			1			
			34			1			
			35				1		
		Brown bullhead							
			21			1			
			25				1		
			26				1		
			28				1		
		Channel catfish							
			21			1			137.87
			22			1			118.81
			26			2			122.64
			28			1			123.26
			47			1			137.64
			48			1			125.23
			49			2			139.00
			50			2			77.81
			52			1			131.99
			53			1			143.14
			57			1			117.39
			58			3			117.43
			61			1			101.01
			68			1			135.09
		Chiselmouth							
			14				4		
			15				1		
			16				2		
			18			2	1		
			19			4			
			20			4			
			21			1			
			24			1			
			25			1			
			26			2			
			27			1			
			28			2			
			29			1			
			30			1			
			32			1			
		Common carp							
			55			1			
			61			1			
			63			2			
			64			2			
			65			1			
			69			1			
			72			1			
		Hatchery rainbow							
			31			1			95.70
			34			1			83.07
		Largescale sucker							
			14				1		
			15				2		
			16			1	1		
			17			1			
			18			1			

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			19			1			
			20			1			
			21			2			
			22			4			
			23			4			
			24			2			
			25			2			
			26			5			
			27			1			
			28			1	1		
			29			2			
			30			1			
			31			3			
			32			4			
			33			3			
			34			3			
			36			3			
			37			2			
			38			2	1		
			39			7			
			40			5			
			41			8			
			42			5			
			43			3	1		
			44			8			
			45			7	1		
			46			6			
			47			9	2		
			48			2	1		
			49			3			
			50			1			
			51			1			
			52			3			
			53			4			
			54			1			
			55			1			
			56			3			
			57			1			
			59			1			
		Smallmouth bass							
			14				1		153.43
			27				1		95.15
			28			1			83.54
			29			1			79.99
		White crappie							
			6				1		
			10			1	5		201.24
			11			2	3		105.39
			12			3	7		119.68
			13			7	19		93.35
			14			17	27		111.64
			15			30	25		96.02
			16			11	11		99.95
			17			1			81.12
			18			2			135.12
			20			1			132.59
			21			2			121.44

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			22			9			115.19
			23			6			111.94
			24			10			108.96
			25			6	2		100.15
			26			2	1		94.21
			27			5			102.75
			28			3			103.58
			29			1			107.49
			30			1			99.49
			33			1			104.99
		Yellow perch							
			12				6		126.40
			13			2	20		89.90
			14			6	7		98.65
			15			3	2		88.78
			16			3	3		90.12
			17			4			60.61
			18			4			63.77
			19			13	1		83.26
			20			6			81.90
			21			2			95.88
			22			1			82.41
			23			4			76.30
			24			3			77.39
			25			6			69.04
			26			2			70.78
			27			1			68.19
CLAYTONIA P									
	10/1/98								
		Black crappie							
			8		1				
			9		5				134.37
			10		4				152.50
			11		6				125.09
			12		1				110.50
			15		1				185.81
			18		1				109.12
			19		2				111.45
			20		1				104.22
			21		4				110.31
			22		1				109.11
		Bluegill							
			6		2				
			7		7				
			8		1				
			11		2				137.88
			12		4				123.63
			13		6				125.97
			14		5				111.87
			15		3				109.72
			16		1				104.91
			17		1				77.68
		Common carp							
			32		1				
			35		2				
			38		1				
			39		1				

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			40		1				
			41		3				
			42		2				
			43		1				
			45		2				
		Largemouth bass							
			9		3				
			10		4				125.56
			11		4				108.24
			12		8				107.44
			13		5				99.39
			14		3				102.21
			15		3				108.35
			30		1				118.03
			31		1				110.98
			33		2				93.79
		Pumpkinseed							
			1		1				
			3		1				
			8		1				
			9		8				
			10		12				
			11		11				
			12		4				
			13		2				
		Yellow perch							
			16		1				125.66
CRANE CREEK RES									
	6/25/98								
		Black crappie							
			14				4		107.56
			15			1	5		100.79
			16			1	6		98.83
			17				6		97.51
			18			11	1		97.80
			19			26	13		93.32
			20			14	5		87.79
			21			12	5		89.86
			22			6	1		82.46
		Bridgelip sucker							
			19			1			
			21			1			
			38			1			
		Brown bullhead							
			13			1	1		
			14			2			
			15			1			
			16			1			
			17			3			
			18			4	2		
			19			3	1		
			20				6		
			21				1		
			23				1		
		Channel catfish							
			14			1			87.24
			18			1			114.70

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			19			1			145.24
			30			1			117.36
			31			2			102.88
			39			1			100.55
		Common carp							
			19			1			
			21			1			
			26			2			
			27			1			
			28			2	1		
			29			2			
			30			4			
			31			4			
			32			1			
			34			2			
			36			1			
			37			3			
			38			4			
			39			2			
			40			4			
			41			8			
			42			2			
			44			1			
			45			1			
			47			4			
			48			2			
			49			1			
			51			1			
			61				2		
		Largemouth bass							
			25			1			102.09
		White crappie							
			11			1			119.34
			12			3			204.92
			14			1	6		114.03
			15			2	6		108.14
			16			11	3		112.55
			17			12	7		109.75
			18			73	11		107.91
			19			107	17		103.73
			20			64	18		101.61
			21			21	6		98.82
			22			5	3		94.38
			23			2			96.06
			24			1	2		94.47
CRANE FALLS RES									
	6/10/98								
		Black crappie							
			12		1				481.97
			16		1				87.94
			19		1				98.13
		Bluegill							
			5		4				
			7		7				134.85
			8		21				117.27
			9		19				112.30
			10		7				100.53

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			11		10				117.50
			12		4				131.89
			13		9				107.00
			14		10				116.48
			15		3				114.56
			16		5				106.45
			17		2				109.12
			18		3				110.42
			19		1				92.00
		Hatchery rainbow							
			22		1				102.29
			23		1				96.71
			25		2				83.85
			26		1				93.90
			30		1				72.83
		Largemouth bass							
			6		2				
			7		1				
			8		3				157.28
			9		2				107.12
			10		2				276.66
			13		2				131.37
			14		3				112.56
			15		2				92.25
			16		4				115.09
			17		5				108.62
			18		7				106.92
			19		6				103.37
			20		6				99.46
			21		3				100.11
			23		1				107.41
			24		3				105.63
			27		1				107.38
			28		1				104.23
			29		1				134.11
			30		1				101.06
			32		1				109.28
			35		2				94.93
			36		5				96.75
			37		2				99.16
			38		4				99.78
			39		5				95.07
			40		3				99.65
			41		3				96.07
			42		2				104.79
		Pumpkinseed							
			7		2				
			8		1				
			9		5				
			10		3				
			11		3				
			12		2				
			13		6				
			14		10				
			15		3				
			16		3				
			17		2				

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			18		1				
		Yellow perch							
			8		2				142.55
			9		7				120.31
			10		1				160.23
			13		1				108.41
			14		1				74.52
			15		2				78.32
			16		2				102.01
			20		1				91.29
DEADWOOD RES									
	10/7/98								
		Hatchery rainbow							
			24			1			92.99
			26			1			92.83
			33			1			
			35			1			
			36			1			92.21
		Kokanee salmon							
			19			5			
			20			4			
			21			4			
			22			2			
			23			1			
			24			1			
			25			2			
			26			1			
			27			2			
			28			1			
			29			6			
			30			8			
			31			3			
			34			1			
		Mountain whitefish							
			24			2			92.30
			27			1			91.13
			28			1			92.37
			29			2			81.51
			30			4			99.73
			32			3			112.64
			33			3			92.12
			34			4			98.37
			35			5			108.35
			36			1			103.58
			37			1			119.62
			38			2			104.94
			39			1			101.12
			40			1			105.70
		Rainbow X cutthroat hybrid							
			33			1			
		Westslope cutthroat							
			24			2			
			27			1			
			32			3			
			34			1			
			35			2			
			37			1			

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			39			1			
			40			1			
INDIAN CREEK RES									
	5/13/98								
		Bluegill							
			12			1			105.37
			14			1			105.32
		Brown bullhead							
			25			1			
		Channel catfish							
			54			1			124.31
		Largemouth bass							
			15			1			112.58
			19			1			102.52
			20			3			106.19
			21			1			105.11
			23			3			97.60
			24			8			100.84
			25			8			103.05
			26			12			102.87
			27			10			98.03
			28			6			98.20
			31			1			112.16
	5/15/98								
		Bluegill							
			4		3				0.00
			7		3				0.00
			8		3				0.00
			9		5				54.81
			10		3				0.00
			11		10				87.05
			12		4				98.02
			13		4				99.66
			14		1				126.63
			28		1				145.60
		Largemouth bass							
			14		2				118.01
			15		5				94.01
			16		2				71.67
			17		1				95.28
			18		2				112.49
			19		4				106.37
			21		2				93.02
			22		1				69.77
			23		3				108.07
			24		9				104.97
			25		27				102.57
			26		24				103.05
			27		24				99.40
			28		14				100.21
			29		5				100.58
			30		4				98.51
			31		2				98.20
LAKE LOWELL									
	4/9/98								
		Black crappie							
			11		1				153.94

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			12		1				0.00
			20						120.97
			23				1		0.00
			24						118.18
			25				1		0.00
			30						113.84
		Bluegill							
			5		1				0.00
			6		1				0.00
			12		2				0.00
			13		2				0.00
		Bridgelip sucker							
			22		1				
			29		1				
			38		1				
		Brown bullhead							
			12		1				
			26		2				
			27				4		
			28				7		
			29				5		
			30			1	1		
			32				1		
		Channel catfish							
			36		1				84.55
			46			1			0.00
			56						0.00
			60						0.00
			62						0.00
			63						0.00
		Chiselmouth							
			22		1				
			23			1			
			29			1			
		Common carp							
			34		1				
			35				1		
			36		1				
			38		1				
			39		1		1		
			42				1		
			43						
			44				1		
			45			1			
			46		1	2			
			47		1	2			
			48		2				
			49		2				
			50		3				
			51		3	1			
			52		2				
			53			1			
			55		1				
			56		1				
		Hatchery rainbow							
			23			1			0.00
			24			1			82.55

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			36			1			92.97
		Lahontan cutthroat							
			23			1			
			36		1	2			
			37			5			
			38			7			
			39			8			
			40		1	1			
			41			4			
			42		1				
			46			1			
		Largemouth bass							
			11		1				0.00
			18		1				92.57
			21		1				84.76
			26			1			119.88
			27		1				112.99
			28		1				101.83
			29		1				0.00
			30			1			113.20
			32		1				120.57
			37		1				106.30
		Largescale sucker							
			12		1				
			30						
			34		1				
			35		1				
			36						
			37		2	1			
			38			2			
			39			1			
			40		1	2			
			41		4	1			
			42		2	1			
			43		3	4			
			44		7	1			
			45		14	4			
			46		11	11	1		
			47		13	8			
			48		19	5	2		
			49		7	8			
			50		5	2			
			51		3	4			
			52		2	2			
			53		1				
			54		1				
		Smallmouth bass							
			36		1				0.00
			40				1		0.00
			46			1			0.00
		Yellow perch							
			7		1				0.00
			8		1				0.00
			9		8				0.00
			10		5				0.00
			13		1				0.00
			15				1		67.36

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			16		1				0.00
			18		1				0.00
			20		1				0.00
			22			1			79.28
	9/30/98								
		Black crappie							
			8		1				
			9		2				
			30		1				98.81
		Bluegill							
			5		4				
			6		1				
			10		2				84.91
			11		8				84.28
			12		4				77.21
			13		1				57.82
			14		1				96.62
		Common carp							
			18		1				
			45		2				
			47		1				
			48		1				
			49		5				
			50		1				
			54		1				
		Largemouth bass							
			6		1				
			7		6				108.03
			8		10				
			9		9				151.56
			10		6				80.41
			11		5				84.90
			12		7				85.30
			13		6				134.15
			14		1				73.75
			15		1				63.97
			18		2				72.77
			19		1				89.10
			21		2				97.12
			22		1				90.70
			23		4				90.82
			25		1				97.45
			28		1				102.35
			34		1				90.49
			35		1				113.72
		Largescale sucker							
			28		1				
			42		1				
			47		1				
			48		2				
			50		1				
			52		2				
			54		2				
		Redside shiner							
			13		1				
		Smallmouth bass							
			6		1				

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			7		2				
			8		6				
			9		5				
			10		1				
			14		2				94.03
			15		6				73.06
			16		7				84.24
			17		5				88.09
			18		2				92.94
			19		3				78.40
			21		1				86.41
			23		2				58.46
		Yellow perch							
			8		1				
LUCKY PEAK RES									
	5/7/98								
		Bridgelip sucker							
			18			1			
			24			3			
			25			1	1		
			26			1			
			27			1			
			29			2	1		
			30			1	1		
			31			1			
			32			1	1		
			33				1		
			34			2			
			35			2	1		
			36			1			
			38				1		
			43				1		
		Chiselmouth							
			17			2	1		
			18			3			
			19			7	1		
			20			5			
			21			6			
			22			5			
			23			8	1		
			24			5			
			25			2			
			26			7			
			27			6			
			28			9			
			29			7			
			30			10			
			31			4			
			32			1			
			33			1			
			34			1			
		Fall chinook salmon							
			29			1			
			43			1			
		Hatchery rainbow							
			25			1			116.47
			30			1			95.32

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			31			2			103.38
			33			3			100.23
			34			1			106.85
			35			2			98.30
		Largescale sucker							
			23			2			
			24			4			
			25			4			
			27			1			
			28			1			
			29			2			
			30			2			
			31			6			
			32			8			
			33			2			
			34			5			
			35			2			
			36			4	1		
			37			6			
			38			3			
			39			4			
			41			4			
			42			3			
			43			2			
			44			5			
			45			4			
			46			1			
			47			2			
			48			1			
			52			1			
		Mountain whitefish							
			22			1			188.55
			25			1			106.12
			29			1			104.86
			31			1			96.52
			32			3			81.56
			33			4			95.84
			34			1			88.00
			36			1			94.57
			37			1			71.00
		Redside shiner							
			13			1			
		Smallmouth bass							
			23			1			109.75
			25			1			94.24
			26			2			97.39
			29			1			98.93
			31			1			109.74
			33			1			106.66
			40			1			114.45
			42			1			120.11
		Tui chub							
			33				1		54000.00
		Wild rainbow/redband							
			32			1			93.95
			37			1			86.23
			39			1			77.64

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			41			1			76.44
		Yellow perch							
			13				1		47.99
			14			1	1		76.76
			16			1	3		79.67
			17				1		55.34
			18				1		75.79
			21				1		76.78
			23			2			84.35
			24			1	1		79.97
			26			1	1		86.66
			27			1			93.22
MANNS CREEK RES									
	4/17/98								
		Black crappie							
			7		1				
			8		1				116.73
			9		4				116.11
			10		9	1	1		208.09
			11		4	1			95.90
			12			1			101.29
			13			1			168.48
			14			3	1		106.68
			15			2			117.73
			16			5			110.86
			17			2	1		113.32
			18		2	6	2		113.13
			19		1				109.87
			20			1			101.96
			21		1	1	1		112.86
			22		2		3		109.52
			23		3	4	2		105.76
			24			1	3		100.21
			25			1			97.83
			26		1		1		106.43
		Bridgelip sucker							
			23			1			
			37			2			
			38			1			
			40			2			
			43			2			
			44			1			
			45				1		
			47			1			
		Hatchery rainbow							
			18			1			69.57
			20		1	2			129.21
			21		2				107.00
			22		1	5			114.96
			23		1	9	1		106.27
			24		1	3			95.42
			25			2			92.54
			26		1	1			95.83
			27			1			96.09
			28		1	3			97.84
			29		2	5			95.26
			30			3			87.46

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			32			2			92.51
			33						86.94
			35						95.31
			36						94.09
		Largemouth bass							
			17		2				93.66
			23			1			98.37
			27		4				99.96
			28		1				105.49
			29		2				105.32
			31		1				101.86
			33		2		1		99.36
			34		2				106.84
			35		2				107.53
			36		2				115.94
			37		2				105.74
			38		1				122.04
			39		2	1			125.34
			40		1				103.62
			42		1				106.75
			45		1				131.65
			52		1				130.12
		Wild rainbow/redband							
			6		4				189.04
			7		11				110.16
			8		24				133.12
			9		11				110.37
			10		10				122.86
			11		4				
			12		7				84.19
			13		10				95.43
			14		8				92.44
			15		12				93.33
			16		8	1			95.12
			17		3				89.24
			18		2	2			85.12
			19		2				
			20		1				129.38
			21		1				
			22		1	1			97.35
			23		1	3			137.96
			24			1			94.82
			25		1	2			85.91
			26			1			99.97
			27			1			96.91
			28			6			95.53
			29		1	10			90.27
			30			4			90.87
			31			2			88.70
			32			3			85.44
			33		1	1			86.29
			34			1			83.90
			35						73.92
			36						82.21
			38			1			67.18

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Total Caught in Trap Nets	Relative Caught	Weight
PADDOCK RES									
	4/22/98								
		Bluegill							
			3		4				0.00
			4		13				0.00
			5		10				0.00
			6		4				0.00
			8		3				0.00
			9		15				13.77
			10		14				92.43
			11		19				127.02
			12		10				99.21
			13		7				89.97
			14		7				121.48
			15		6				111.03
			16		5				118.64
			17		8				132.33
			18		3	1	2		134.56
			19		8	1	6		142.64
			20		7		3		139.46
			21		2		2		134.54
			22		1		2		147.31
			23		1				144.84
			24		2	1			160.18
			29		1				34.36
			31		1				38.88
		Brown bullhead							
			22						
			24		1				
			25		1				
			26				1		
			27		1		1		
			28			1	1		
			29			1	4		
			30			2	4		
			31			2			
			32			3			
			33			1	1		
			34			2			
			36		1	1			
			37			1			
			38						
		Hatchery rainbow							
			42			1			138.63
			44			1			124.56
			45						136.68
			46						123.48
		Largemouth bass							
			7		2				0.00
			8		1				0.00
			9		1				745.54
			12		1				123.86
			13		1				96.10
			15		3				97.72
			16		3				112.55
			17		8				100.97
			18		6				103.66

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			19		3				98.62
			20		6				101.19
			21		4				101.39
			25		1				98.63
			26		2				112.25
			28		1				55.40
			29			1			124.07
			30		1				44.13
			31		9		2		62.62
			32		19	4	3		78.32
			33		25	12	1		66.53
			34		27	15	2		76.83
			35		10	5	1		73.37
			36		2	1			54.64
		Pumpkinseed							
			8		1				
			11		2				
			16		2				
			18				1		
REDTOP POND									
	10/15/98								
		Black crappie							
			6		4				
			7		20				
			8		4				
			16			2			
			18			2			108.22
			20			2			107.48
		Bluegill							
			12		2				121.75
			13		12				88.33
			14		8	2			102.32
			15		2				103.26
			16			2			139.42
			18		2				
		Brown bullhead							
			24		2				
			26		2				
			27		2				
			28			6			
			29		8	10			
			30		8	34			
			31			10			
			32		2	4			
			33		2				
		Largemouth bass							
			4		2				
			5		20				
			6		14				
			7		176				
			8		4				
			9		6				
			12		2	2			169.40
			13		2				
			14		2	4			143.34
			19			4			125.33
			21		2				113.27

Appendix D. Continued

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			22		2				
			24		2	4			111.56
			25			2			108.91
			26		2	8			112.63
			27			4			108.91
			28			4			116.38
			34			2			107.89
			39			2			112.33
			40			2			
			41			2			105.96
			43			2			99.11
			49			2			92.20
		Pumpkinseed							
			10			2			
			11		4				
			12		2				
			13		8	4			
			14		4				
			15		6	6			

1998 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-23

Project I: Surveys and Inventories | Subproject I-D: Southwest Region

Job No.: c | Title: Rivers and Streams Investigations

Contract Period: July 1, 1998 to June 30, 1999

ABSTRACT

A team of biologists attempted to develop a method to identify adult bull trout *Salvelinus confluentus* in the lower Deadwood River below Deadwood Dam. Four biologists floated the roadless section of river below the dam in inflatable kayaks to approximately 5 km from the river mouth. The pool habitat areas were sampled by snorkeling. The sampling crew did not locate any bull trout. Suitable snorkel sites were infrequent due to the high river gradient and flows.

A survey was conducted on the upper Deadwood River from Deer Creek to Deadwood Reservoir to locate any hatchery fall chinook *Oncorhynchus tshawytscha* redds. A total of 12 chinook redds were identified on October 6, 1998

The Payette River was sampled with boat mounted electrofishing gear at eight stations from near Black Canyon Dam to the confluence with the Snake River. The data collected was used to define fish species distribution and their relative abundance from the Dam to the mouth. Data collected was compared to data from 1977. Rainbow trout *O. mykiss* were not collected at any site. Mountain whitefish *Prosopium williamsoni* were present in all river reaches. Sculpin, *Cottus spp.* were only captured between Black Canyon Dam and the town of Emmett, Idaho.

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Regional Fishery Manager

DEADWOOD RIVER

Introduction

Deadwood Reservoir investigations were continued in 1998 by the Southwest Region Idaho Department of Fish and Game (Department) to further document the population status of bull trout *Salvelinus confluentus* for the U.S. Department of Interior, Bureau of Reclamation, Pacific Northwest Region (BOR). Bull trout are found in the Deadwood drainage in tributaries to the reservoir, the Deadwood River above the reservoir and the reservoir proper (Allen 1998). The Deadwood River below Deadwood Dam has not been surveyed for the presence of bull trout. We attempted a reconnaissance level survey of the lower river to locate any bull tout that might be in the mainstem river corridor.

Methods

The lower Deadwood River was investigated by biologists floating the river in inflatable kayaks and snorkeling the large pools and tributary mouths. The lower Deadwood River is a roadless area for approximately 40 km before a Forest Service road crosses the river. Four biologists began kayaking the Deadwood River below the dam on August 10 and vacated the river downstream on August 13, 1998. The snorkelers were to identify and estimate numbers of any bull trout observed.

Results

No bull trout were observed on the trip. Snorkel sites were rather rare at the flows (600 cfs) experienced on the trip. Typically we encountered very small pools that contained large amounts of dissolved gas bubbles which limited snorkeling observations. The river was generally a high gradient run riffle complex with little pool habitat available. The lower ends of tributary streams were surveyed. No bull trout were observed in the tributaries. Generally we observed few fish in the river. Pool species observed were mountain whitefish *Prosopium williamsoni* and redband trout *Oncorhynchus mykiss gairdneri*. Generally the fish numbers were low; no density estimates were made. Water temperature through most of the float trip was 4° C.

UPPER DEADWOOD RIVER REDD SURVEY

Methods

The Deadwood River from Deer Creek mouth to the reservoir was surveyed for the presence of fall chinook *O. tshawytscha* redds on October 10, 1998. The survey was completed by two

biologists walking the bank downstream and identifying possible fall chinook redds, and identifying any live fish and or carcasses.

Results

Twelve redds were identified; ten adult fall chinook were observed, and two fall chinook carcasses were located.

Recommendation

1. Annually conduct redd surveys in the area above Deadwood Reservoir during mid-October.

PAYETTE RIVER - BLACK CANYON DAM TO MOUTH

Introduction

During late 1996 the Southwest Region fish management group was asked by the Lower Payette River Watershed Advisory Group to develop a fishery monitoring plan for the lower Payette River. The last substantive survey of this reach was done by Reid (1975). The objective of this project was to describe the fish community in the Payette River between Black Canyon Dam and the confluence with the Snake River.

Methods

Eight access points were selected because of the ability to launch and operate a small electrofishing jetboat. The approximate location of each site was at rivermile (RM): 1,4, 15, 18, 25, 30, 33, 36. Fish collection efforts were done twice for each sample site in July and then repeated in October of 1997. Electrofishing was conducted for 1800 seconds of energized field time on each bank of the river. Electrofishing was generally done floating downstream with the current. A boat operator and one netter accomplished the fish collection.

Electrofishing gear was powered by a 5000 watt generator with 230v output. The output voltage was generally set to run on straight DC. Pulsed DC was utilized when straight DC was deemed ineffective. Voltages ranged from 300 to 425v at 3 to 8 amp during sampling.

During electrofishing operations attempts were made to collect all fish immobilized by the gear. Netted fish were placed into a live car and held until the sample section was completed. Fish collected were identified as to species, measured to the nearest cm, and weighed to the nearest g. Processed fish were returned to the river. Data was entered into a regional fishery database and

summarized into length frequency by species. Fishery indices were compared to 1974 data reported in Reid (1975).

Results

Species Composition

The composition of fish species captured in 1997 was similar to the species documented by Reid (1975). The most numerous species were mountain whitefish *Prosopium williamsoni,* chiselmouth Acrocheilus *alutaceus*, redside shiner *Richardsonius balteatus,* and largescale sucker *Catostomus macrocheilus.* Some seasonal differences in ranking of abundance between species were seen (Table 1) and Reid (1975). Reid (1975) documented brown trout *Salmo trutta*, black crappie *Pomoxis nigromaculatus*, warmouth *Lepomus gulosus,* and white catfish *Ictalurus catus* which were not captured in this study but these species were also rare in Reid's study.

Some caution must be taken on interpreting the species composition of both studies because only electrofishing equipment was employed to capture fish. Also the type of equipment was different in the two studies, Reid used a throw probe anode where in 1997 the anodes were boom mounted to a jet boat. Secondly, habitats sampled probably differed between studies which could influence species capture rates. It would have been wise to incorporate some type of seining methods to capture smaller fish species. Sample site descriptions for the eight sample sites, species composition and length frequencies of captured fish are provided in Appendix A.

Species Distribution

Distribution of captured fishes is presented by sample site and month in Table 2. We could not compare against Reid (1975) because previous data was not presented by sample sites. Rainbow trout *Oncorhynchus mykiss*, were only captured in the uppermost reach directly below Black Canyon Dam. These rainbow trout were hatchery fish that had been stocked near this site in the fall. Sculpin species *Cottus* spp. also were limited to the upper sample reaches above Emmett. Mountain whitefish were distributed from the mouth to the dam. Most of the nongame fishes were also widely distributed (Table 2). Smallmouth bass *Micropterus dolomieui* were also captured at most sites.

Conclusions

The majority of gamefish in these reaches of the lower Payette River that a sportsman would be interested in pursuing were non-native warmwater species. Mountain whitefish were the only coldwater species represented throughout the whole study area. We do not know if reproduction of mountain whitefish is supported throughout the whole study area. No brown trout were captured even after stocking for over five years below the Dam. Likely this introduction effort failed and has been discontinued. We suspect that warm water temperatures in certain reaches directly affect the distribution of fishes in these reaches of the Payette River. A valuable additional dataset need is reach-wide water temperature data.

Table 1. Comparison of species composition from boat electrofishing sampling on the Payette River from Black Canyon Dam to mouth, July versus October 1997.

July 1997 Fish species	Percent	October 1997 fish species	Percent
		Brown bullhead *Ameirus nebulosus*	0.5
		Bluegill *Lepomis macrochirus*	<0.1
Bridgelip sucker *Catostomus columbianus*	6.1	Bridgelip sucker *Catostomus columbianus*	3.1
Channel catfish *Ictalurus punctatus*	0.2	Channel catfish *Ictalurus punctatus*	1.9
Common carp *Cyprinus carpio*	0.8	Common carp *Cyprinus carpio*	5.6
Chiselmouth *Acrocheilus alutaceus*	13.0	Chiselmouth *Acrocheilus alutaceus*	3.1
Dace species *Rhinichthys* spp.	3.9	Dace species *Rhinichthys* spp.	1.8
		Rainbow trout (hatchery) *Oncorhynchus mykiss*	1.4
Largemouth bass *Micropterus salmoides*	0.2	Largemouth bass *Micropterus salmoides*	0.5
Longnose dace *Rhinichthys cataractae*	0.2		
Largescale sucker *Catostomus macrocheilus*	5.3	Largescale sucker *Catostomus macrocheilus*	21.0
Mountain whitefish *Prosopium williamsoni*	42.9	Mountain whitefish *Prosopium williamsoni*	35.0
Northern pikeminnow *Ptychocheilus oregonensis*	2.9	Northern pikeminnow *Ptychocheilus oregonensis*	1.7
Pumpkinseed sunfish *Lepomis gibbosus*	<0.1		
Redside shiner *Richardsonius balteatus*	21.1	Redside shiner *Richardsonius balteatus*	11.9
Sculpin species *Cottus* spp.	<0.1	Sculpin species *Cottus* spp.	1.4
Smallmouth bass *Micropterus dolomieui*	1.6	Smallmouth bass *Micropterus dolomieui*	7.5
Sucker species *Catostomus* spp.	1.6	Sucker species *Catostomus* spp.	3.4
		White crappie *Pomoxis annularis*	<0.1

Table 2. Distribution of fish species by river mile sample site in the Payette River below Black Canyon Dam to mouth. Samples taken by boat electrofishing during July and October 1997.

Date	River Mile	BBH	BLG	BLS	CAT	CRP	CSL	DAC	HRB	LMB	LND	LSS	MWF	NSF	PKS	RSS	SCP	SMB	SUK	WCR
7/97	1			36	1		64	3				18	21					5		
7/97	4			63	1	3	41	8				11	35	1		65		9		
7/97	15			9		1	45	30		4		19	280	12		49		4		
7/97	18			3	1	6	14	2				21	107	9		59		9		
7/97	25			1		1	41	12				8	127	10	1	80			12	
7/97	30					3	25	2				8	136	2		88		3		
7/97	33			4			17	18				13	100	18		30		1	15	
7/97	36			1		1	2				3	3	16	4		35	1		5	
10/97	1			1	13	16		4				38	12					11	1	1
10/97	4			10	7	10		2				31	93	1				4		
10/97	15			10	2	11		3		5		47	79	1				3	5	
10/97	18	6	1	1		18				1		8	1					22	2	
10/97	25			3		7	25					24	22	2		17		2		
10/97	30			2		4	7	9				22	43	5		59		46	31	
10/97	33			7				3				47	70	7		65	7		2	
10/97	36			3			5		17			32	98	4			10	1		

BBH- brown bullhead, BLG-bluegill, BLS-bridgelip sucker, CAT-channel catfish, CRP-common carp, CSL-chiselmouth, DAC-dace species, HRB-hatchery rainbow trout, LMB-largemouth bass, LND-longnose dace, LSS-largescale sucker, MWF-mountain whitefish, NSF-northern pikeminnow, PKS-pumpkinseed, RSS-redside shiner, SCP-sculpin species, SMB-smallmouth bass, SUK-sucker species, WCR-white crappie.

LITERATURE CITED

Allen, D.B. 1998 Deadwood River Bull Trout Study, Interim Report for 1997 Studies. Idaho Department of Fish and Game, 98-10.

Reid, W.W. 1975 Federal Aid in Fish Restoration, Job Performances Report, Project F-63-R-4, Snake River Fisheries Investigations, Idaho Department of Fish and Game.

Appendix A. Sample site descriptions and species length frequencies from the Payette River 1997.

STREAM: Payette River SAMPLE DATE: 10/20/97
SECTION: RM 1
EPA REACH: 17050122001 QUAD MAP:
RTS: R, T, S LAT/LONG: 44 65.38 ; 116 57.23
SECTION DESCRIPTION: Just above confluence with Snake River

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BLS	Bridgelip sucker
CAT	Channel catfish
CRP	Common carp
DAC	Dace spp.
LSS	Largescale sucker
MWF	Mountain whitefish
SMB	Smallmouth bass
SUK	Sucker spp.
WCR	White crappie

Length Frequency

Species	CM Group	Method	Number Measured
BLS	15	EF	1
CAT		EF	0
CAT	39	EF	1
CAT	42	EF	3
CAT	46	EF	1
CAT	48	EF	1
CAT	50	EF	2
CAT	55	EF	1
CAT	59	EF	1
CAT	66	EF	1
CAT	71	EF	1
CRP	41	EF	1
CRP	46	EF	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
CRP	49	EF	1
CRP	50	EF	1
CRP	52	EF	1
CRP	53	EF	2
CRP	54	EF	1
CRP	56	EF	1
CRP	57	EF	1
CRP	60	EF	1
CRP	61	EF	1
CRP	63	EF	1
CRP	69	EF	1
CRP	80	EF	1
CRP	82	EF	1
DAC	4	EF	1
DAC	5	EF	1
DAC	6	EF	2
LSS	6	EF	3
LSS	7	EF	4
LSS	8	EF	4
LSS	9	EF	6
LSS	34	EF	1
LSS	36	EF	1
LSS	39	EF	1
LSS	40	EF	1
LSS	41	EF	1
LSS	42	EF	1
LSS	44	EF	1
LSS	47	EF	1
LSS	48	EF	1
LSS	49	EF	5
LSS	50	EF	1
LSS	51	EF	3
LSS	54	EF	2
LSS	55	EF	1
MWF	15	EF	1
MWF	16	EF	3
MWF	17	EF	3
MWF	18	EF	2
MWF	19	EF	1
MWF	27	EF	2
SMB	5	EF	2
SMB	7	EF	3
SMB	8	EF	1
SMB	9	EF	2
SMB	15	EF	1
SMB	24	EF	1
SMB	36	EF	1
SUK	7	EF	1
WCR	14	EF	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 7/28/97
SECTION: RM 1
EPA REACH: 17050122001 QUAD MAP:
RTS: R, T, S LAT/LONG: 44 65.38 ; 116 57.23
SECTION DESCRIPTION: Just above confluence with Snake River

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

bls	Bridgelip sucker
cat	Channel catfish
csl	Chiselmouth
dac	Dace spp.
lss	Largescale sucker
mwf	Mountain whitefish
smb	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	8	EF	1
BLS	10	EF	3
BLS	11	EF	4
BLS	12	EF	3
BLS	13	EF	5
BLS	14	EF	3
BLS	15	EF	3
BLS	16	EF	2
BLS	17	EF	4
BLS	18	EF	2
BLS	19	EF	1
BLS	21	EF	2
BLS	23	EF	1
BLS	24	EF	1
BLS	30	EF	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
CAT	48	EF	1
CSL	8	EF	3
CSL	9	EF	3
CSL	10	EF	2
CSL	12	EF	3
CSL	13	EF	4
CSL	14	EF	5
CSL	15	EF	8
CSL	16	EF	8
CSL	17	EF	5
CSL	18	EF	12
CSL	19	EF	2
CSL	20	EF	1
CSL	21	EF	3
CSL	22	EF	1
CSL	23	EF	4
DAC	6	EF	3
LSS	12	EF	2
LSS	13	EF	1
LSS	14	EF	1
LSS	15	EF	3
LSS	16	EF	1
LSS	17	EF	1
LSS	18	EF	2
LSS	19	EF	1
LSS	20	EF	1
LSS	23	EF	1
LSS	41	EF	1
LSS	46	EF	1
LSS	47	EF	1
LSS	49	EF	1
MWF	10	EF	2
MWF	11	EF	9
MWF	12	EF	5
MWF	13	EF	5
SMB	6	EF	1
SMB	17	EF	2
SMB	18	EF	1
SMB	27	EF	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 10/20/97
SECTION: RM 4
EPA REACH: 17050122001 QUAD MAP:
RTS: R, T, S LAT/LONG: 44 3.26 ; 116 56
SECTION DESCRIPTION: Hyw 95 Bridge in Fruitland

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BLS	Bridgelip sucker
CAT	Channel catfish
CRP	Common carp
DAC	Dace spp.
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
SMB	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	13	EF	1
BLS	15	EF	1
BLS	17	EF	1
BLS	25	EF	1
BLS	32	EF	1
BLS	34	EF	1
BLS	37	EF	1
BLS	39	EF	1
BLS	47	EF	1
BLS	48	EF	1
CAT	42	EF	1
CAT	43	EF	1
CAT	44	EF	1
CAT	46	EF	2

Appendix A. Continued

Species	CM Group	Method	Number Measured
CAT	47	EF	1
CAT	56	EF	1
CRP	44	EF	2
CRP	51	EF	1
CRP	53	EF	2
CRP	61	EF	2
CRP	64	EF	1
CRP	67	EF	1
CRP	70	EF	1
DAC	7	EF	2
LSS	9	EF	1
LSS	10	EF	2
LSS	11	EF	2
LSS	12	EF	1
LSS	17	EF	1
LSS	31	EF	1
LSS	35	EF	1
LSS	37	EF	1
LSS	38	EF	1
LSS	39	EF	1
LSS	41	EF	1
LSS	43	EF	1
LSS	44	EF	2
LSS	46	EF	2
LSS	47	EF	3
LSS	48	EF	2
LSS	50	EF	1
LSS	51	EF	2
LSS	52	EF	1
LSS	53	EF	1
LSS	57	EF	2
LSS	60	EF	1
MWF	14	EF	2
MWF	15	EF	3
MWF	16	EF	16
MWF	17	EF	19
MWF	18	EF	14
MWF	19	EF	18
MWF	20	EF	1
MWF	21	EF	1
MWF	22	EF	2
MWF	23	EF	2
MWF	24	EF	3
MWF	25	EF	3
MWF	26	EF	4
MWF	27	EF	2
MWF	28	EF	3
NSF	51	EF	1
SMB	20	EF	1
SMB	26	EF	1
SMB	27	EF	1
SMB	29	EF	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 7/28/97
SECTION: RM 4
EPA REACH: 17050122001 QUAD MAP:
RTS: R, T, S LAT/LONG: 44 3.26 ; 116 56
SECTION DESCRIPTION: Hwy 95 Bridge in Fruitland

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

bls	Bridgelip sucker
cat	Channel catfish
crp	Common carp
csl	Chiselmouth
dac	Dace spp.
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
rss	Redside shiner
smb	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	9	EF	2
BLS	10	EF	5
BLS	11	EF	8
BLS	12	EF	10
BLS	13	EF	11
BLS	14	EF	3
BLS	15	EF	3
BLS	16	EF	3
BLS	17	EF	4
BLS	18	EF	3
BLS	19	EF	2
BLS	20	EF	2

Appendix A. Continued

Species	CM Group	Method	Number Measured
BLS	21	EF	3
BLS	23	EF	1
BLS	24	EF	1
BLS	34	EF	1
BLS	35	EF	1
CAT	46	EF	1
CRP	51	EF	1
CRP	58	EF	1
CRP	59	EF	1
CSL	7	EF	1
CSL	8	EF	2
CSL	9	EF	2
CSL	11	EF	1
CSL	12	EF	1
CSL	13	EF	6
CSL	14	EF	9
CSL	15	EF	5
CSL	16	EF	4
CSL	18	EF	6
CSL	19	EF	2
CSL	20	EF	2
DAC	5	EF	3
DAC	6	EF	2
DAC	7	EF	2
DAC	8	EF	1
LSS	13	EF	1
LSS	14	EF	2
LSS	19	EF	1
LSS	20	EF	1
LSS	27	EF	1
LSS	47	EF	1
LSS	48	EF	1
LSS	50	EF	1
LSS	53	EF	1
LSS	54	EF	1
MWF	9	EF	2
MWF	10	EF	9
MWF	11	EF	16
MWF	12	EF	5
MWF	13	EF	3
NSF	17	EF	1
RSS	6	EF	1
RSS	7	EF	6
RSS	8	EF	7
RSS	9	EF	9
RSS	10	EF	18
RSS	11	EF	20
RSS	12	EF	4
SMB	9	EF	1
SMB	10	EF	1
SMB	11	EF	3
SMB	12	EF	2
SMB	18	EF	1
SMB	25	EF	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 10/22/97
SECTION: RM15
EPA REACH: 17050122003 QUAD MAP:
RTS: R, T, S LAT/LONG: 43 51.39 ; 116 47.76
SECTION DESCRIPTION: Black's Creek Bridge

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BLS	Bridgelip sucker
CAT	Channel catfish
CRP	Common carp
DAC	Dace spp.
LMB	Largemouth bass
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
SMB	Smallmouth bass
SUK	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BLS	12	EF	1
BLS	26	EF	1
BLS	40	EF	1
BLS	43	EF	1
BLS	44	EF	1
BLS	47	EF	2
BLS	50	EF	1
BLS	52	EF	1
BLS	53	EF	1
CAT	49	EF	1
CAT	59	EF	1
CRP	49	EF	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
CRP	52	EF	1
CRP	53	EF	2
CRP	54	EF	1
CRP	55	EF	1
CRP	56	EF	2
CRP	59	EF	1
CRP	61	EF	1
CRP	62	EF	1
DAC	4	EF	1
DAC	6	EF	2
LMB	8	EF	1
LMB	14	EF	3
LMB	26	EF	1
LSS	20	EF	1
LSS	38	EF	1
LSS	43	EF	4
LSS	44	EF	3
LSS	45	EF	2
LSS	46	EF	2
LSS	47	EF	2
LSS	48	EF	4
LSS	49	EF	5
LSS	50	EF	2
LSS	51	EF	6
LSS	52	EF	2
LSS	53	EF	4
LSS	54	EF	2
LSS	55	EF	2
LSS	56	EF	1
LSS	57	EF	2
LSS	58	EF	1
LSS	64	EF	1
MWF	14	EF	1
MWF	15	EF	5
MWF	16	EF	12
MWF	17	EF	5
MWF	18	EF	6
MWF	22	EF	2
MWF	23	EF	3
MWF	24	EF	3
MWF	25	EF	14
MWF	26	EF	9
MWF	27	EF	11
MWF	28	EF	3
MWF	29	EF	2
MWF	31	EF	1
MWF	34	EF	1
MWF	36	EF	1
NSF	46	EF	1
SMB	5	EF	1
SMB	7	EF	1
SMB	11	EF	1
SUK	7	EF	2
SUK	8	EF	2
SUK	9	EF	1

Appendix A. Continued

STREAM: Payette River
SECTION: RM15
EPA REACH: 17050122003
RTS: R, T, S
SECTION DESCRIPTION: Blacks Bridge

SAMPLE DATE: 7/25/97
QUAD MAP:
LAT/LONG: 43 51.39 ; 116 47.76

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

bls	Bridgelip sucker
crp	Common carp
csl	Chiselmouth
dac	Dace spp.
lmb	Largemouth bass
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
rss	Redside shiner
smb	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	9	boat	1
BLS	10	boat	4
BLS	12	boat	1
BLS	13	boat	1
BLS	14	boat	1
BLS	22	boat	1
CRP	60	boat	1
CSL	8	boat	8
CSL	9	boat	4
CSL	10	boat	3
CSL	11	boat	3
CSL	12	boat	2

Appendix A. Continued

Species	CM Group	Method	Number Measured
CSL	13	boat	9
CSL	14	boat	6
CSL	15	boat	4
CSL	16	boat	1
CSL	17	boat	1
CSL	18	boat	2
CSL	22	boat	1
CSL	23	boat	1
DAC	4	boat	1
DAC	5	boat	21
DAC	6	boat	4
DAC	7	boat	3
DAC	8	boat	1
LMB	29	boat	1
LMB	33	boat	1
LMB	35	boat	1
LMB	39	boat	1
LSS	9	boat	3
LSS	11	boat	4
LSS	12	boat	1
LSS	13	boat	2
LSS	15	boat	1
LSS	23	boat	1
LSS	24	boat	1
LSS	46	boat	1
LSS	47	boat	1
LSS	48	boat	1
LSS	49	boat	1
LSS	52	boat	1
LSS	57	boat	1
MWF		boat	0
MWF	8	boat	3
MWF	9	boat	12
MWF	10	boat	45
MWF	11	boat	63
MWF	12	boat	16
MWF	20	boat	1
MWF	22	boat	4
MWF	23	boat	1
MWF	24	boat	3
MWF	25	boat	1
MWF	28	boat	1
MWF	29	boat	1
NSF	6	boat	1
NSF	7	boat	2
NSF	8	boat	3
NSF	13	boat	3
NSF	15	boat	2
NSF	16	boat	1
RSS	5	boat	4
RSS	6	boat	4
RSS	7	boat	9
RSS	8	boat	4
RSS	9	boat	7

Appendix A. Continued

Species	CM Group	Method	Number Measured
RSS	10	boat	13
RSS	11	boat	4
RSS	12	boat	1
RSS	13	boat	1
RSS	16	boat	1
RSS	49	boat	1
SMB	7	boat	1
SMB	12	boat	1
SMB	18	boat	1
SMB	27	boat	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 10/22/97
SECTION: RM18
EPA REACH: 17050122003 QUAD MAP:
RTS: R, T, S LAT/LONG: 43 56.74 ; 116 42.4
SECTION DESCRIPTION: Fox Store Bridge

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BBH	Brown bullhead
BLG	Bluegill
BLS	Bridgelip sucker
CRP	Common carp
LMB	Largemouth bass
LSS	Largescale sucker
MWF	Mountain whitefish
SMB	Smallmouth bass
SUK	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BBH	17	EF	2
BBH	18	EF	1
BBH	19	EF	2
BBH	23	EF	1
BLG	13	EF	1
BLS	46	EF	1
CRP	31	EF	1
CRP	40	EF	1
CRP	42	EF	1
CRP	43	EF	2
CRP	44	EF	1
CRP	45	EF	1
CRP	47	EF	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
CRP	48	EF	1
CRP	50	EF	1
CRP	51	EF	2
CRP	52	EF	1
CRP	60	EF	2
CRP	61	EF	1
CRP	73	EF	2
LMB	37	EF	1
LSS	45	EF	1
LSS	49	EF	3
LSS	51	EF	1
LSS	53	EF	1
LSS	54	EF	1
LSS	59	EF	1
MWF	29	EF	1
SMB	4	EF	1
SMB	5	EF	5
SMB	6	EF	8
SMB	7	EF	4
SMB	8	EF	1
SMB	9	EF	1
SMB	14	EF	1
SMB	27	EF	1
SUK	8	EF	2

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 7/25/97
SECTION: RM18
EPA REACH: 17050122003 QUAD MAP:
RTS: R, T, S LAT/LONG: 43 56.74 ; 116 42.4
SECTION DESCRIPTION: Fox Store Bridge

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

bls	Bridgelip sucker
cat	Channel catfish
crp	Common carp
csl	Chiselmouth
dac	Dace spp.
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
rss	Redside shiner
smb	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	13	boat	1
BLS	20	boat	1
BLS	46	boat	1
CAT	41	boat	1
CRP	47	boat	1
CRP	48	boat	1
CRP	50	boat	1
CRP	53	boat	1
CRP	57	boat	1
CRP	73	boat	1
CSL	12	boat	2
CSL	13	boat	2

Appendix A. Continued

Species	CM Group	Method	Number Measured
CSL	14	boat	4
CSL	15	boat	1
CSL	16	boat	4
CSL	17	boat	1
DAC	6	boat	1
DAC	8	boat	1
LSS	11	boat	1
LSS	12	boat	2
LSS	14	boat	1
LSS	15	boat	1
LSS	43	boat	1
LSS	47	boat	3
LSS	48	boat	2
LSS	49	boat	2
LSS	50	boat	2
LSS	51	boat	1
LSS	52	boat	2
LSS	53	boat	1
LSS	54	boat	2
MWF	8	boat	2
MWF	9	boat	14
MWF	10	boat	31
MWF	11	boat	31
MWF	12	boat	4
MWF	20	boat	1
MWF	21	boat	4
MWF	22	boat	4
MWF	23	boat	7
MWF	24	boat	5
MWF	25	boat	1
MWF	26	boat	1
MWF	29	boat	1
MWF	32	boat	1
NSF	13	boat	3
NSF	14	boat	3
NSF	16	boat	1
NSF	17	boat	1
NSF	40	boat	1
RSS	6	boat	1
RSS	7	boat	1
RSS	8	boat	8
RSS	9	boat	35
RSS	10	boat	14
SMB	9	boat	1
SMB	11	boat	1
SMB	12	boat	1
SMB	13	boat	1
SMB	14	boat	1
SMB	17	boat	1
SMB	19	boat	1
SMB	21	boat	1
SMB	37	boat	1

Appendix A. Continued

STREAM: Payette River
SECTION: RM25
EPA REACH: 17050122004
RTS: R, T, S
SECTION DESCRIPTION: Letha Bridge

SAMPLE DATE: 10/22/97
QUAD MAP:
LAT/LONG: 43 54.11 ; 116 38.09

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BLS	Bridgelip sucker
CRP	Common carp
CSL	Chiselmouth
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SMB	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	14	EF	1
BLS	49	EF	1
BLS	51	EF	1
CRP	47	EF	1
CRP	54	EF	3
CRP	57	EF	1
CRP	62	EF	1
CRP	63	EF	1
CSL	17	EF	1
CSL	21	EF	2
CSL	23	EF	4
CSL	24	EF	3
CSL	25	EF	5
CSL	27	EF	3

Appendix A. Continued

Species	CM Group	Method	Number Measured
CSL	28	EF	1
CSL	29	EF	4
CSL	30	EF	2
LSS	27	EF	1
LSS	30	EF	1
LSS	31	EF	2
LSS	33	EF	1
LSS	45	EF	1
LSS	47	EF	1
LSS	48	EF	2
LSS	49	EF	2
LSS	50	EF	2
LSS	51	EF	2
LSS	52	EF	4
LSS	53	EF	1
LSS	54	EF	2
LSS	56	EF	2
MWF	14	EF	1
MWF	15	EF	6
MWF	16	EF	1
MWF	19	EF	1
MWF	22	EF	2
MWF	23	EF	2
MWF	24	EF	1
MWF	25	EF	2
MWF	26	EF	1
MWF	27	EF	1
MWF	28	EF	2
MWF	30	EF	1
MWF	31	EF	1
NSF	38	EF	1
NSF	43	EF	1
RSS	4	EF	5
RSS	5	EF	9
RSS	7	EF	1
RSS	8	EF	1
RSS	9	EF	1
SMB	6	EF	1
SMB	11	EF	1

Appendix A. Continued

STREAM: Payette River
SECTION: RM25
EPA REACH: 17050122004
RTS: R, T, S
SECTION DESCRIPTION: Letha Bridge

SAMPLE DATE: 7/22/97
QUAD MAP:
LAT/LONG: 43 54.12 ; 116 38.09

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

bls	Bridgelip sucker
crp	Common carp
csl	Chiselmouth
dac	Dace spp.
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
pks	Pumpkinseed
RSS	Redside shiner
suk	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BLS	15	boat	1
CRP	45	boat	1
CSL	8	boat	1
CSL	9	boat	1
CSL	11	boat	4
CSL	12	boat	7
CSL	13	boat	8
CSL	14	boat	9
CSL	15	boat	4
CSL	16	boat	3
CSL	17	boat	1
CSL	19	boat	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
CSL	20	boat	2
DAC	5	boat	3
DAC	6	boat	4
DAC	7	boat	4
DAC	8	boat	1
LSS	46	boat	1
LSS	47	boat	1
LSS	48	boat	1
LSS	49	boat	1
LSS	51	boat	1
LSS	55	boat	1
LSS	57	boat	1
LSS	60	boat	1
MWF	7	boat	1
MWF	8	boat	6
MWF	9	boat	15
MWF	10	boat	23
MWF	11	boat	11
MWF	12	boat	3
MWF	13	boat	1
MWF	20	boat	3
MWF	21	boat	5
MWF	22	boat	17
MWF	23	boat	11
MWF	24	boat	10
MWF	25	boat	5
MWF	26	boat	1
MWF	27	boat	8
MWF	28	boat	2
MWF	29	boat	3
MWF	31	boat	1
MWF	32	boat	1
NSF	11	boat	1
NSF	13	boat	3
NSF	16	boat	3
NSF	27	boat	1
NSF	32	boat	1
NSF	46	boat	1
PKS	9	boat	1
RSS		boat	0
RSS	7	boat	3
RSS	8	boat	11
RSS	9	boat	4
RSS	10	boat	2
SUK	9	boat	2
SUK	10	boat	6
SUK	11	boat	2
SUK	13	boat	1
SUK	14	boat	1

Appendix A. Continued

STREAM: Payette River
SECTION: RM30
EPA REACH: 17050122005
RTS: R, T, S
SECTION DESCRIPTION: Smith's Access

SAMPLE DATE: 10/22/97
QUAD MAP:
LAT/LONG: 43 53.01 ; 116 29.56

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BLS	Bridgelip sucker
CRP	Common carp
CSL	Chiselmouth
DAC	Dace spp.
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SMB	Smallmouth bass
SUK	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BLS	48	EF	1
BLS	54	EF	1
CRP	59	EF	1
CRP	60	EF	2
CRP	61	EF	1
CSL	8	EF	3
CSL	9	EF	1
CSL	10	EF	3
DAC	4	EF	2
DAC	5	EF	4
DAC	6	EF	2
DAC	7	EF	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
LSS	43	EF	1
LSS	46	EF	2
LSS	47	EF	3
LSS	48	EF	3
LSS	49	EF	3
LSS	50	EF	2
LSS	52	EF	3
LSS	53	EF	2
LSS	55	EF	1
LSS	56	EF	1
LSS	57	EF	1
MWF	15	EF	2
MWF	16	EF	1
MWF	21	EF	1
MWF	23	EF	9
MWF	24	EF	8
MWF	25	EF	5
MWF	26	EF	5
MWF	27	EF	4
MWF	28	EF	4
MWF	29	EF	1
MWF	30	EF	2
MWF	32	EF	1
NSF	5	EF	1
NSF	37	EF	1
NSF	41	EF	1
NSF	45	EF	1
NSF	46	EF	1
RSS	4	EF	2
RSS	5	EF	32
RSS	6	EF	8
RSS	7	EF	3
RSS	8	EF	4
RSS	9	EF	6
RSS	10	EF	2
RSS	11	EF	2
SMB	3	EF	1
SMB	4	EF	3
SMB	5	EF	23
SMB	6	EF	6
SMB	7	EF	5
SMB	8	EF	2
SMB	12	EF	4
SMB	23	EF	1
SMB	34	EF	1
SUK	5	EF	4
SUK	6	EF	14
SUK	7	EF	11
SUK	8	EF	2

Appendix A. Continued

STREAM: Payette River
SECTION: RM30
EPA REACH: 17050122005
RTS: R, T, S
SECTION DESCRIPTION: Smith's Access

SAMPLE DATE: 7/22/97
QUAD MAP:
LAT/LONG: 43 53.01 ; 116 29.56

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Species Sampled

crp	Common carp
csl	Chiselmouth
dac	Dace spp.
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
rss	Redside shiner
smb	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
CRP	49	boat	1
CRP	58	boat	1
CRP	68	boat	1
CSL		boat	0
DAC	2	boat	1
DAC	6	boat	1
LSS	4	boat	1
LSS	44	boat	2
LSS	45	boat	1
LSS	46	boat	2
LSS	50	boat	1
LSS	57	boat	1
MWF	8	boat	5
MWF	9	boat	8

Appendix A. Continued

Species	CM Group	Method	Number Measured
MWF	10	boat	29
MWF	11	boat	11
MWF	13	boat	1
MWF	19	boat	1
MWF	20	boat	4
MWF	21	boat	5
MWF	22	boat	13
MWF	23	boat	19
MWF	24	boat	16
MWF	25	boat	9
MWF	26	boat	4
MWF	27	boat	2
MWF	28	boat	3
MWF	29	boat	3
MWF	31	boat	1
MWF	32	boat	1
MWF	33	boat	1
NSF	14	boat	1
NSF	23	boat	1
RSS		boat	0
RSS	6	boat	2
RSS	7	boat	4
RSS	8	boat	2
RSS	9	boat	7
RSS	10	boat	7
RSS	23	boat	1
SMB	11	boat	1
SMB	14	boat	2

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 10/21/97
SECTION: RM33
EPA REACH: 17050122005 QUAD MAP:
RTS: R, T, S LAT/LONG: 43 53.01 ; 116 29.56
SECTION DESCRIPTION: Emmett Hyw 52 Bridge

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Species Sampled

BLS	Bridgelip sucker
DAC	Dace spp.
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SCP	Sculpin spp.
SUK	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BLS	11	EF	1
BLS	44	EF	1
BLS	47	EF	1
BLS	48	EF	1
BLS	49	EF	1
BLS	50	EF	1
BLS	53	EF	1
DAC	4	EF	1
DAC	5	EF	1
DAC	6	EF	1
LSS	10	EF	2
LSS	44	EF	1
LSS	46	EF	3
LSS	47	EF	6

Appendix A. Continued

Species	CM Group	Method	Number Measured
LSS	48	EF	6
LSS	49	EF	7
LSS	50	EF	5
LSS	51	EF	2
LSS	52	EF	4
LSS	54	EF	6
LSS	55	EF	4
LSS	57	EF	1
MWF	15	EF	2
MWF	16	EF	1
MWF	17	EF	4
MWF	21	EF	1
MWF	22	EF	6
MWF	23	EF	12
MWF	24	EF	10
MWF	25	EF	7
MWF	26	EF	8
MWF	27	EF	3
MWF	28	EF	7
MWF	29	EF	5
MWF	30	EF	2
MWF	32	EF	1
MWF	37	EF	1
NSF	12	EF	1
NSF	17	EF	1
NSF	26	EF	1
NSF	39	EF	1
NSF	46	EF	1
NSF	50	EF	1
NSF	52	EF	1
RSS	5	EF	5
RSS	6	EF	2
RSS	7	EF	19
RSS	8	EF	27
RSS	9	EF	6
RSS	10	EF	6
SCP	5	EF	1
SCP	7	EF	1
SCP	8	EF	3
SCP	9	EF	1
SCP	10	EF	1
SUK	6	EF	1
SUK	7	EF	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 7/22/97
SECTION: RM33
EPA REACH: 17050122005 QUAD MAP:
RTS: R, T, S LAT/LONG: 43 53.01 ; 116 29.56
SECTION DESCRIPTION: Emmett Hwy 52 bridge

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

bls	Bridgelip sucker
csl	Chiselmouth
dac	Dace spp.
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
rss	Redside shiner
smb	Smallmouth bass
suk	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BLS	11	boat	1
BLS	15	boat	1
BLS	44	boat	1
BLS	47	boat	1
CSL	5	boat	2
CSL	7	boat	1
CSL	8	boat	2
CSL	9	boat	3
CSL	10	boat	1
CSL	11	boat	5
CSL	12	boat	3
DAC	5	boat	4
DAC	6	boat	8

Appendix A. Continued

Species	CM Group	Method	Number Measured
DAC	7	boat	6
LSS	21	boat	1
LSS	41	boat	1
LSS	48	boat	4
LSS	49	boat	1
LSS	50	boat	2
LSS	51	boat	1
LSS	53	boat	1
LSS	54	boat	1
LSS	55	boat	1
MWF	6	boat	1
MWF	7	boat	1
MWF	8	boat	1
MWF	9	boat	11
MWF	10	boat	20
MWF	11	boat	11
MWF	12	boat	1
MWF	13	boat	1
MWF	14	boat	2
MWF	17	boat	2
MWF	19	boat	3
MWF	20	boat	3
MWF	21	boat	10
MWF	22	boat	7
MWF	23	boat	5
MWF	24	boat	2
MWF	25	boat	1
MWF	26	boat	4
MWF	27	boat	2
MWF	28	boat	4
MWF	29	boat	3
MWF	30	boat	1
MWF	32	boat	1
MWF	36	boat	1
MWF	37	boat	1
MWF	39	boat	1
NSF	5	boat	2
NSF	6	boat	5
NSF	7	boat	2
NSF	8	boat	1
NSF	9	boat	1
NSF	11	boat	4
NSF	15	boat	1
NSF	21	boat	1
NSF	42	boat	1
RSS	5	boat	4
RSS	6	boat	7
RSS	7	boat	8
RSS	8	boat	8
RSS	9	boat	2
RSS	11	boat	1
SMB	13	boat	1
SUK	6	boat	3
SUK	7	boat	3
SUK	8	boat	4
SUK	9	boat	2
SUK	10	boat	3

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 10/21/97
SECTION: RM36
EPA REACH: 17050122005 QUAD MAP:
RTS: R, T, S LAT/LONG: 43 55.1 ; 116 26.18
SECTION DESCRIPTION: Plaza Road Bridge

Transect Information:

Section Length (m): 0
Elevation (m):
Gradient (%): 0.00%
Population Est: 0.0 S.E(popest): 0
Shade (%): 0.0
Mean Width (m):
Mean Depth (m):
Cover (%):

Water Chemistry

Time:
H2O Temp(C):
Air Temp(C):
pH:
Alkalinity(mg/l CaCO3):
Hardness(uS/cm3):
Conductivity(mg/l CaCO3):

Habitat Type:

Pool: %
Riffle: %
Run: %
Pocket: %

Substrate

Organic: %
Sand: %
Gravel: %
Rubble: %
Boulder: %
Bedrock: %

Species Sampled

BLS	Bridgelip sucker
CSL	Chiselmouth
HRB	Hatchery rainbow
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
SCP	Sculpin spp.
SMB	Smallmouth bass

Length Frequency

Species	CM Group	Method	Number Measured
BLS	12	EF	1
BLS	43	EF	1
BLS	48	EF	1
CSL	12	EF	1
CSL	14	EF	1
CSL	26	EF	2
CSL	31	EF	1
HRB	21	EF	2
HRB	23	EF	4
HRB	24	EF	6
HRB	25	EF	1
HRB	26	EF	3
HRB	27	EF	1
LSS	5	EF	1

Appendix A. Continued

Species	CM Group	Method	Number Measured
LSS	6	EF	4
LSS	7	EF	1
LSS	9	EF	1
LSS	10	EF	1
LSS	11	EF	2
LSS	12	EF	1
LSS	13	EF	1
LSS	15	EF	2
LSS	17	EF	1
LSS	19	EF	1
LSS	31	EF	1
LSS	42	EF	1
LSS	43	EF	1
LSS	44	EF	1
LSS	45	EF	2
LSS	46	EF	2
LSS	47	EF	2
LSS	48	EF	1
LSS	49	EF	1
LSS	50	EF	1
LSS	51	EF	2
LSS	52	EF	1
MWF	15	EF	1
MWF	16	EF	3
MWF	17	EF	2
MWF	21	EF	1
MWF	22	EF	2
MWF	23	EF	1
MWF	24	EF	9
MWF	25	EF	8
MWF	26	EF	4
MWF	27	EF	6
MWF	28	EF	5
MWF	29	EF	5
MWF	30	EF	7
MWF	31	EF	6
MWF	32	EF	6
MWF	33	EF	5
MWF	34	EF	3
MWF	35	EF	6
MWF	36	EF	2
MWF	37	EF	1
MWF	38	EF	5
MWF	39	EF	7
MWF	41	EF	1
MWF	42	EF	1
MWF	43	EF	1
NSF	34	EF	1
NSF	35	EF	1
NSF	36	EF	1
NSF	37	EF	1
SCP	3	EF	1
SCP	4	EF	3
SCP	7	EF	2
SCP	8	EF	4
SMB	7	EF	1

Appendix A. Continued

STREAM: Payette River SAMPLE DATE: 7/21/97
SECTION: RM36
EPA REACH: 17050122005 QUAD MAP:
RTS: R1W, T7N, S27 LAT/LONG: 43 55.107 ; 116 26.19
SECTION DESCRIPTION: Plaza Road Bridge

Transect Information:

Section Length (m):	0
Elevation (m):	683
Gradient (%):	0.00%
Population Est:	0.0 S.E(popest): 0
Shade (%):	0.0
Mean Width (m):	
Mean Depth (m):	
Cover (%):	

Water Chemistry

Time:	
H2O Temp(C):	
Air Temp(C):	
pH:	
Alkalinity(mg/l CaCO3):	
Hardness(uS/cm3):	
Conductivity(mg/l CaCO3):	

Habitat Type:

Pool:	%
Riffle:	%
Run:	%
Pocket:	%

Substrate

Organic:	%
Sand:	%
Gravel:	%
Rubble:	%
Boulder:	%
Bedrock:	%

Species Sampled

bls	Bridgelip sucker
crp	Common carp
csl	Chiselmouth
lnd	Longnose dace
lss	Largescale sucker
mwf	Mountain whitefish
nsf	Northern pikeminnow
rss	Redside shiner
scp	Sculpin spp.
suk	Sucker spp.

Length Frequency

Species	CM Group	Method	Number Measured
BLS	43	boat	1
CRP	57	boat	1
CSL	10	boat	1
CSL	14	boat	1
LND	7	boat	2
LND	8	boat	1
LSS	11	boat	1
LSS	43	boat	1
LSS	50	boat	1
MWF	9	boat	1
MWF	10	boat	2
MWF	21	boat	4

Appendix A. Continued

Species	CM Group	Method	Number Measured
MWF	22	boat	2
MWF	24	boat	1
MWF	26	boat	2
MWF	28	boat	1
MWF	30	boat	1
MWF	34	boat	1
MWF	35	boat	1
NSF	11	boat	1
NSF	16	boat	1
NSF	22	boat	1
NSF	57	boat	1
RSS	5	boat	11
RSS	6	boat	16
RSS	7	boat	2
RSS	8	boat	2
RSS	9	boat	4
SCP	9	boat	1
SUK	1	boat	1
SUK	10	boat	1
SUK	15	boat	3

1998 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-23

Project I: Surveys and Inventories

Subproject I-D: Southwest Region

Job No.: d

Title: Salmon and Steelhead Investigations

Contract Period: July 1, 1998 to June 30, 1999

ABSTRACT

Salmon spawning ground surveys were conducted in Bear Valley, Elk, and Sulphur Creek trend areas on August 24-30, 1998. Salmon redds numbered 102, 105, and 47 in Bear Valley, Elk, and Sulphur Creek trend areas, respectively.

Additional data on Southwest Region salmon and steelhead investigations are incorporated in a separate, statewide Salmon and Steelhead Investigations report.

Author:

Dale B. Allen
Regional Fishery Manager

METHODS

Redd Counts

Redds were enumerated according criteria described in the draft Idaho Redd Counting Manual. Carcasses encountered were identified as to sex (F-female, M-male) and measured (fork length) where possible. When possible, live fish observed were visually classified as to sex and ocean age (jacks, II, or III, IV).

RESULTS

Redd Counts

Salmon redds were counted in trend areas in Bear Valley, Elk, and Sulphur creeks on August 24-30, 1998. Redds counted, dates of counts, live fish observed, and carcasses encountered by area are reported in Table 1.

Table 1. Redd counts, live fish and carcasses identified in Bear Valley, Elk, and Sulphur Creeks from August 24 – 30, 1998.

SECTION	SECTION CODE	DATE OF COUNT	NUMBER OF REDDS	LIVE FISH OBSERVED	CARCASSES
Bear Valley Creek Mine exclosure	Ws-9a	8/24/98	6	2-3oc female	2-3oc female
Bear Valley Creek Mine exclosure To Cub Creek	Ws-9b	8/24/98	6	1-3oc female	1-3oc female
Bear Valley Creek Cub Creek to Sack Creek	Ws-9c	8/25/98	17	1-3oc male 7-3oc female	
Bear Valley Creek Sack Creek to Elk Creek	Ws-9d	8/24/98	25	3-3oc male 3-3oc female	
Bear Valley Creek Elk Creek to Poker Bridge	Ws-10a	8/30/98	44	1-3oc male 2-3oc female	11-3oc male 9-3oc female 1-jack
Bear Valley Creek Poker Bridge to Fir Creek	Ws-10b	8/30/98	4	2-3oc male 2-3oc female	3-3oc male
Elk Creek WF Elk Creek to Twin Bridges	Ws-11a	8/25/98	69	9-2oc female 3-2oc male 8-3oc female 14-3oc male 6-unk	28-3oc female 29-3oc male 4-unk
Elk Creek Twin Bridges to Guard Station	Ws-11b	8/25/98	31	3-2oc female 9-3oc female 9-3oc male 7- unk	1-2oc female 6-3oc female 3-3oc male
Elk Creek Guard Station to Bear Valley Creek	Ws-11c	8/25/98	5	4-3oc female 1-3oc male 1-jack	1-3oc male
Sulphur Creek Below Ranch	Ws-12	8/26/98	25	1-3oc female	4-3oc male 3-3oc female 1-unk
Sulphur Creek Above Ranch	OS-4	8/26/98	22	1-2oc female 2-3oc female	1-3oc female 1-3oc male

1998 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-23

Project II: Technical Guidance Subproject II-D: Southwest Region

Contract Period: July 1, 1998 to June 30, 1999

ABSTRACT

Regional fishery personnel continue to respond to a large number of public requests for fishing information. Biweekly ASK FISH reports were prepared and forwarded to vendor for distribution. Regional fishery staff consulted with the Environmental Staff Biologist for requests on fish population status and concerns on a multitude of projects in the Southwest Region. Numerous requests for fish stocking advice and/or rates were received from local Treasure Valley residents.

Regional staff completed three pond construction projects within the Southwest Region in 1998. The Lowman Nature Fishing Ponds located near the Ten Mile Creek Bridge in upper Lowman were completed in cooperation with the Boise National Forest, Lowman Ranger District. The Idaho City Interpretive Center Pond was expanded with excavators, a fishing pier and aeration system were also added in cooperation with the City of Idaho City and the Boise Basin Interpretive Association. Ed's Pond was excavated from a shallow pit on Gem Island on lands owned by the Department and Gem County. Gem County contracted the excavation work and also used volunteer labor to construct the pond.

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1998 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-23

Project IV: Habitat Management Subproject III-D: Southwest Region

Contract Period: July 1, 1998 to June 30, 1999

ABSTRACT

Habitat concerns were addressed in multiple comments to public agencies and private parties through reviews of projects that the Southwest Region addressed in 1998.

Regional fishery staff conducted no specific habitat projects during this report period.

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Approved By:

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